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Myographiæ Comparatæ
SPECIMEN:

O R, A

Comparative Description

Of all the

MUSCLES

IN A

MAN, and in a QUADRUPED:

SHEWING

*Their Discoverer, Origin, Progress, Insertion,
Use and Difference.*

To which is added

An ACCOUNT of the MUSCLES peculiar
to a Woman.

With an *Etymological Table*, and several useful
INDEXES.

By JAMES DOUGLAS M. D.

E D I N B U R G H,

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THE PREFACE.

TH^O Myography has been often cultivated by industrious and good Hands, yet it still affords a fertile Field of Reformation and Improvement: Of this, it is presumed, this small Treatise will be sufficient Evidence. Not that I lay Claim to the vain Presumption of having corrected all the Mistakes, and supplied all the Defects of those who have wrote upon this Subject: That I leave to finishing Hands.

I question not but that I may be liable to Correction in many Things; or, at least, that a better and more dextrous Hand may rectify some of my Descriptions.

The Encouragement I had to publish these Descriptions was, that I took them all from the Life, I mean, some ocular Inspection in Dissection, without taking any of them upon the Credit of another. For, before I was determined as to the Origin, Progress and Insertion of the Muscles, I raised them on both Sides of above twelve Subjects, both
Foetuses

Fœtuses and Adults, still committing to Paper what I observed. I read often, and carefully perused all the Authors that have wrote upon the Muscles, from the immortal Galen down to this Time; and, after comparing all the Descriptions, one with another, I singled out such as I found conformable to the Life, that being the Standard I always go by; and, according as that directed me, I have here rectified what I humbly conceived to be their Mistakes, (but without mentioning them as theirs) and supplied their Defects as far as my Observation went.

If any one has a-mind to censure these Descriptions as false, I only beg Leave to acquaint him before Hand, that I will always appeal to the ocular Inspection of Subjects, and if that gives it against me, I shall willingly retract, and acknowledge my Error. Whatever is offered against them, that is not accompanied with that, I shall pay but little Regard to it. And to justify, in some Measure, the Conformity of these Descriptions to exact Observation and Matter of Fact, I still keep by me the Half of one of my Subjects, artfully prepared, which will afford me Means of Demonstration when a fresh Subject is not at Hand.

And here I cannot but take Notice, that, in the many Bodies I have viewed, I have not
met

The P R E F A C E.

v

met with that Frequency of Lusus naturæ that is so commonly talked of, especially by those who are loth to take the Pains to make a strict and narrow Inquiry in the Dissection of these useful Machines of Motion. It is true, indeed, that Nature does sometimes sport and vary in the Composition of a Muscle. Thus I have observed two Palmarises in one Hand; I have found three Heads to the Biceps cubiti, the uncommon Head arising from the Middle of the Os humeri; I have seen one of the Interossei come from the upper Part of the Carpus externally, &c. The other Instances I could adduce I refer to another Occasion.

As for the Comparative Part of this Treatise, or the Interlacing the Descriptions of the human Muscles with those of the canine, that, I presume, needs no Apology. The many useful Discoveries drawn from the Dissection of Quadrupeds, the Knowledge of the true Structure of divers Parts of the Body, of the Course of the Blood and Chyle, and of the Use and proper Action of the Parts, that are chiefly owing to this Sort of Dissection; these, I say, give a very warrantable Plea for insisting upon it, tho' it may be censured by the Vulgar.

As for what relates particularly to the Muscles of a Dog, or that Quadruped
which

which I have chose for my Subject, I was induced to make the Parallel between those of a Man, and those of that Animal, by two Reasons.

1. One is, the Opportunity of shewing the Contrivance and Use of the Muscles subservient to the peculiar Motions of a Dog, and such as its different Way of living did necessarily require: For, where Nature has acted uniformly, I am silent; and that indeed is frequently met with, there being an exact Similitude between the Make and Structure of many of the Muscles of a Man, and that of the corresponding Muscles in a Dog: But, where any Difference appears, in respect of Origin or Insertion, it is there (and there only) that my comparative Remarks take Place.

2. The other Reason is taken from the Benefit and Conveniency of the young Students of Anatomy, who may readily procure so common a Subject; and, if they once acquire a Dexterity of raising the Muscles in it, may promise themselves an equal Ability in raising those of the human Body, after the Dissection of one, or two at most.

Galen, the great Head of the Anatomical School, both practised himself, and recommended to his Scholars the frequent Dissection of Monkeys and Apes, as highly conducive

ducive to a more perfect Knowledge of the admirable Structure of the Organs of the human Body. I do not affirm, as some would have it, that he never dissected any Thing else; for, not to mention the many other Reasons that might be offered to the contrary, the very Descriptions he gives of several Muscles suit only to the human Body, and differ from all the Quadrupeds; but, because that ever renowned Author has left us on Record an Account of the Muscles in a Ape, as well as in a Man, I desire the Reader to remark, That the Descriptions of the Muscles, in his Administrationes anatomicæ, and in his Book De dissectione musculorum, are chiefly taken from Apes: But the Account we have of them in his admirable Book, De usu partium, are all taken from Men. It is Pity the great Vesalius did not consider this.

The Method I have here observed is the same with that made Use of at Surgeons-Hall in this City, the most noted and most illustrious School of Anatomy now in Europe. As so weighty an Authority was more than sufficient to determine my Choice, so I cannot but say that it seems to be the best accommodated to the Capacity of young Students, and to be concerted in the most easy and distinct Way.

I have

I have purposely omitted the anatomical Administration, or the Manner of raising the Muscles, upon the Consideration that it would have enlarged the Bulk of this Treatise, which is designed for a Manual, fit to be carried about to publick Dissections, and would have increased its Price, without doing the young Student any additional Service, it being impossible to make any an Operator in this Way by oral Precepts; manual Operation, and the seeing one dissect, are the only effectual Means for the compassing that End.

This comparative Survey I design to continue through all the six Parts into which the human Body is anatomically divided, the Specimen now offered upon the Muscles being what I had first drawn up, and withal a not improper Forerunner to the remaining Parts.

It remains now to acquaint the Reader, that all the Muscles discovered or described by the immortal Galen stand here without any Name or Mark affixed; those discovered since have the Names of their respective Discoverers joined to them; and those which I humbly conceive to have lien hitherto undiscovered, and have been brought to Light by my assiduous Application to this Part of Anatomy, without any Assistance from other Men or Books, have three Stars set after their Names. Tho' I have joined the Discoverer's

coverer's Name to the Title or Denomination of the Muscle, yet I take the Liberty to give my own Descriptions, without mentioning in what particular Point it is that I depart from them. Indeed, where I find the Descriptions agreeable to the Life, or to what Observation I have been able to make, I have kept to them, and particularly in a great many given by the justly celebrated Mr. Cowper, whose very Words I have often used, it being impossible to find others with more Justice to the Subject; and to the same most accurate and indefatigable Improver of Anatomy am I obliged for the Uses of most of the Muscles both human and canine. From the Labour and Industry of this worthy Person, who is equally famous for his wonderful Dexterity in dissecting, and great Skill in designing, we are now daily expecting a complete Account and History of the human Muscles, enriched with Abundance of Improvements and new Discoveries, and illustrated with original Figures, being all done after the Life by his own Hand.

I have subjoined to this Treatise an Etymological Table of the Muscles, the frequent Reading and attentive Consideration of which will render easy and familiar the harsh and not easily remembered Names of many of those Instruments of Motion.

I have industriously avoided the common Fault of multiplying Muscles without Necessity: For Example, I have described the Extensors of the Cubit as one Muscle; the Gastrocnemius and Solæus I make but one Muscle, arising by four Heads; the oblique and transverse Muscles of the Abdomen, in my Opinion, make only three Muscles, and not so many Pairs. Indeed I make four Muscles of the Triceps femoris, because it has so many distinct Beginnings and Endings, as may be seen in the History of the Muscles itself, to which I hasten.

The

The Introduction.

BEfore I descend to the Description of each Muscle in particular, I think it requisite, for the Benefit of young Beginners, to give a short Account of their Structure and Composition in general; and, by Way of Introduction to that, to premise what is meant by a *Fibre* and a *Membrane*; the whole being only an Abridgment of what is found in Authors who treat of that Subject at large.

A *Fibre* is called in *Greek* *ις*, in *Latin* *fibra*, which properly signifies those *Villi* or Strings that hang about the Roots of Plants; but, in an anatomical Sense, it may be described, *A Substance, in Figure like a fine Thread, of a tensile and irritable Nature, by the various Texture and Combination of which all the solid Parts of the human Body are framed.*

Of these *Fibres* there are divers Kinds; for some are membranous, some carnous, some cartilaginous, some osseous, and some nervous; but these three last mentioned

tioned belong to another Place, whether I refer them. The carnous Fibres are vascular and hollow, being full of little Cells ; they are called *Fibræ motrices*, in as much as they are the chief Organs of muscular Motion. But of these, and the other membranous and tendinous Fibres, more hereafter.

The Difference of these Fibres may be likewise taken from their Situation or Course, with Reference to which they are called *streight*, as running lengthways, or in right Lines ; *circular*, as running round some Part, those, for Instance, of the *Sphincter* Muscles ; *transverse*, which intersect the streight Ones at different Angles ; or *oblique*, which cut both the streight and transverse at unequal Angles.

A Membrane is a broad, thin, white, dilateable Substance, interwoven with several Sorts of Fibres, like a Web.

It is called in Greek *ὑμην, κίτων*, and *μεμβρανή* ; all which Appellations, in the Works of *Hippocrates* and *Galen*, denote one and the same Thing, being by them indifferently used : But later Writers have appropriated them to particular Membranes. Thus *Hymen* is only given to that circular Fold of the inner Coat of the *Vagina uteri*, placed near its outer Orifice ;

rifice; *Meninx* is only attributed to the Membranes that involve the Brain; *κίτων* still denotes a Membrane or Coat. Now, in *English*, a Membrane, taken in a large Sense, comprehends all the *Tegumenta* or Coverings that invest the solid, or contain the fluid Parts; and these two have their particular Names, according to the different Parts they envelope. Thus the Membrane that covers the *Cranium*, or Skull, is called *Pericranium*; that which lines the Inside of the *Thorax*, *Pleura*; that which invests the *Abdomen*, *Peritonæum*; the Membrane which firmly adheres to the Surface of all the Bones, *Periosteum*. Besides that the Membranes of some particular Parts have also particular Names, as we may see in their History. The Membranes which form the Coat of membranous Bodies, such as the Stomach, Guts, &c. or the Membranes of the Vessels containing the Humours, are properly stiled *Coats* and *Vessels*.

All the membranous Fibres have a Sort of Elasticity or Spring, whereby, upon Occasion, they can very easily extend and contract themselves again, as may be observed in the *Peritonæum*, *Stomach* and *Uterus*. The nervous Filaments interlaced between them, and pouring in the animal

mal Spirits, make them extremely sensible; whence the Ancients were led into a Mistake, in affirming that the Membranes were the true Organs of Feeling.

Every Membrane, tho' it appears never so thin, yet it is manifestly double, and between the Duplicature the Vessels run. And in the Tissue of their inner Membrane there are placed Abundance of small Glands, which separate an Humour for moistening them, and thereby hinder preternatural Adhesion to the Parts they touch, which always happens to any of the *Viscera* affected with a *Schirrhus* or hard Tumor, which, in such a Case, adheres firmly to all the neighbouring Parts.

The Use of the Membrane is to wrap up and cover the Parts, to strengthen them, to defend several of them from being hurt by the subjacent Bones, to sustain the Vessels that are ramified upon them, to keep the Parts united; and it is worth our Observation, that the admirable Sympathy, or Consent of the Parts one with another, depends, in a great Measure, upon their fibrous Connexions.

All that soft Part of the Body, the Vulgar calls *Flesh*, is, by Anatomists, distinguished into various Parts or Parcels, which they Name so many Muscles.

A Muscle is nothing but a Fasciculus, or Bundle of fleshy and tendinous Fibres, inclosed in a proper Membrane, by Means of which all the Motions in an animal Body are performed.

It is called *μῦς* by the Greeks, (which Word properly signifies *Mus*, a *Mouse*) and that perhaps from the Likeness some of them have to that Animal when stript of its Skin; but others, with more Reason, do derive it from *μῦναι*, *contrahere*, which is the proper Action of a Muscle.

The whole Body of the Muscle is commonly distinguished into three Parts, *viz.* The Head or Beginning, the Body or Belly, and the Tail or Ending; or into the Middle, and the two Extremities.

The Head is that Part of the Muscle which arises from the most stable Part unto which the Contraction is made; for it is a constant Rule, that every Muscle is moved towards its Beginning, which thence may be called the Centre of its Motion.

The Origin of a Muscle is, for the most Part, tendineo-carnous; sometimes it is intirely tendinous, and sometimes it is observed to be only fleshy.

The Tail, or End of a Muscle, is that Part of it which is implanted or inserted
into

into the Member which is to be moved. This Extremity is commonly called its Tendon, or *Tendo* in *Latin*; yet *Fallopianus* gives it often the Name of *Chorda*, the *Greeks* call it ἀπνεύρωσις; but, at present, by this Word is only meant a thin tendinous Expansion, or Membrane-like Dilatation, sent off from the Tendon of a Muscle, as that of the *Biceps cubiti*, *Semitendinosus tibiæ*, &c.

The Substance of a Tendon is the very same with that of the rest of the Muscle; only its Fibres being closely compacted together, for the Conveniency perhaps of having a greater Number of them inserted into a narrow Place, they feel harder, and appear of a whiter Colour; so that the fleshy Fibres of a Muscle are only its Tendon divided and loose; and the Tendon is nothing but those very Fibres closely united, as *Spigelius* has most elegantly expressed it.

It is very probable that every single Muscle either begins or ends tendinous, (with this Difference, that some few of them end in the *Periosteum*, tho' the greatest Part do penetrate that Membrane, and are immediately inserted into the Bone) the stronger and more conspicuous being extended beyond the fleshy Part; the slender,

der, and not so discernible, ly either hid under the Flesh, or they are interlaced between its Fibres.

It is necessary to know that the Head and Tail of a Muscle are Terms convertible; for, according to the different Situation of the Body, those Extremities do so alter, that the Part which was before immoveable and fixed, becomes moveable.

The Belly of a Muscle is the middle Part of it, which consists of fleshy Fibres, red, lax, and spongy, as may be distinctly observed in a Piece of parboiled Flesh. Now, each Fibre is made up of a vast Number of little *Fibrillæ*, which are so many very slender hollow Pipes, bound about by small transverse parallel Threads, which divide these hollow *Fibrils* into a great many *Vesiculæ* or Cells, that have no Communication one with another, but only afford a Place of Entertainment for the Blood and Spirits in the Action of the Muscle. This red Colour of the fleshy Fibres is only owing to the Blood they receive; for, upon injecting warm Water plentifully into the Arteries, the Redness abates, and the Fibres put on the same Colour with these distractile Tubes.

The proper constituent Parts of a Muscle are those already described.

The common are Arteries, Veins, Nerves, Lymphæducts, and Fat. The Arteries import the Blood, and the Veins convey it back again to the Heart; the Nerves bring animal Spirits upon any Impression communicated to them from the Mind; the Lymphæducts, perhaps, carry back the Remains of the nourishing Juice to be refunded into the venal Mass; the Fat, that is lodged upon and between the Fibres, serves to lubricate and render them more fit for Action.

A Muscle is either single or compound. In the first all the fleshy Fibres run parallel to one another, or in the same Direction; in the latter they run in several Planes crossing one another, or in different Courses.

All Muscles which serve for the same Motion are called *Congeneres*, because they assist one another in their Action; and those which are the Instruments of opposite Motions are named *Antagonistæ*. As for Example: Every *Flexor*, or bending Muscle, has a *Tensor*, or extending Muscle; and it is a constant Observation, that, when one of the Muscles is shortned, the other is extended; for the shortning of the Muscle which acts must needs pro-

duce

duce an Extention of its Antagonist, or of that which acteth not.

The Use or Action of the Muscles is to perform all the different Motions of the Parts, and that is done by contracting themselves ; for, when the *Fibrillæ motrices* are shortned, the moveable Part must of Necessity be drawn towards the fixed ; or the Part from which the Muscle does spring, and that into which it is inserted, must needs be brought nearer each other : But after what particular Manner this is transacted I shall not at present inquire, but refer my inquisitive Reader, who delights in such Speculations, to the Authors who handle that Subject, where their various Conjectures may be seen at large, which, in Truth, I am little fond of transcribing. The Account of muscular Motion, given by the great *Bernouillius* late Physician at *Basil*, seems to be the most natural, and the most agreeable to the Rules of *Mechanisin*, of any that has been hitherto advanced ; and, to repair the Loss that we ly under, of not meeting readily with that incomparable Treatise, the World will speedily see a correct Edition of it, with large Improvements, from Dr. *Mead*, whose distinguishing Capacity in the Way of Physick and Learning is accom-

accompanied with a Candor and Goodness that affects all who knew him.

The Differences of the Muscles being mostly taken from the very same Things whence their Names are derived, to avoid all needless Repetitions I shall refer to the *Etymological Table*, and proceed.

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An Alphabetical Table of the Parts, with the Names and Number of Muscles belonging to each.

Musculi abdominis V.

Obliquus ascendens. Obliquus descendens. Pyramidalis. Rectus. Transversalis.

Musculi ani III.

Levator major, seu internus. Levator minor, seu externus. Sphincter.

Musculi

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Musculi auriculæ II. Communes. Proprii.

Musculi auris internæ IV.

Externus auris. Internus auris. Musculus stapedis. Obliquus.

Musculi capitis XII.

Caput concutiens. Complexus. Obliquus inferior.

Obliquus superior. Rectus internus major. Re-

ctus internus minor. Rectus lateralis. Rectus

major. Rectus minor. Splenius. Sterno-ma-

stoidæus. Trachelo-mastoidæus.

Musculi carpi IV.

Extensor carpi radialis. Extensor carpi ulnaris.

Flexor carpi radialis. Flexor carpi ulnaris.

Musculus coccygis. Coccygæus.

Musculi colli VI.

Interspinales. Intertransversales. Intervertebra-

les. Longus. Spinalis. Transversalis.

Musculi cubiti V.

Anconæus. Biceps externus. Biceps internus.

Brachialis externus. Brachialis internus.

Musculi quatuor digitorum manus V.

Extensor digitorum communis. Flexor profundus.

Flexor sublimis. Interossei. Lumbricales.

Musculi quatuor digitorum pedis VI.

Extensor brevis. Extensor longus. Flexor pro-

fundus. Flexor sublimis. Interossei. Lumbric-

ales.

N. B. Musculi pollicis, indicis, & minimi di-
giti, vid. ord. alphabet.

Musculi

with the Names and Number of Muscles. xxv

Musculi dorfi III.

Longissimus. Semispinalis. Transversales.

Musculi femoris XVI.

Adductores. Gemini. Glutæus major. Glutæus medius. Glutæus minor. Iliacus externus. Iliacus internus. Obturator externus. Obturator internus. Pectinalis. Psoas magnus. Quadratus.

Musculi cutis frontis & occipitis II.

Musculus frontalis verus, seu Corrugator Coiteri. Occipito-frontalis.

Musculi genæ II. Buccinator. Quadratus.

Musculi humeri IX.

Coraco-brachialis. Deltoides. Infraspinatus. Latissimus dorfi. Pectoralis. Subscapularis. Supraspinatus. Teres major. Teres minor.

Musculi ossis hyoidis VI.

Coraco-hyoidæus. Genio-hyoidæus. Mylo-hyoidæus. Sterno-hyoidæus. Stylo-chondro-hyoidæus. Stylo-hyoidæus.

Musculi indicis III.

Abductor indicis. Extensor secundi internodii indicis proprius. Extensor tertii internodii indicis.

Musculi labiorum VIII.

Depressor labii inferioris proprius. Depressor labii superioris proprius. Depressor labiorum communis. Elevator labii inferioris proprius. Elevator labii superioris proprius. Elevator labiorum communis. Sphincter labiorum. Zygomaticus.

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Musculi

Musculi laryngis VIII.

Arytænoidæus major. Arytænoidæus minor. Crico-arytænoidæus lateralis. Crico-arytænoidæus posticus. Crico-thyreoidæus. Hyo-thyreoidæus. Sterno-thyreoidæus. Thyreo-arytænoidæus.

Musculi linguæ IV.

Cerato-glossus. Genio-glossus. Lingualis. Styloglossus.

Musculi lumborum V.

Intertransversales. Psoas parvus. Quadratus. Spinalis. Transversalis, seu Sacer.

Musculi mallei. Vid. Musculi aur. intern.

Musculi maxillæ inferioris V.

Digastricus. Masseter. Pterigoidæus externus. Pterigoidæus internus. Temporalis.

Musculus meatus auditorii.

Musculus meatus auditorii novus.

Musculi minimi digiti manus III.

Abductor minimi digiti. Extensor tertii internodii minimi digiti. Flexor primi internodii minimi digiti.

Musculi minimi digiti pedis II.

Abductor. Flexor primi internodii minimi digiti.

Musculus nasi. Rinaeus, vel Nasalis.

Musculi cutis occipitis. Vid. Mus. cutis frontis.

Musculi oculi VI.

Abductor. Adductor. Depressor. Elevator. Obliquus inferior. Obliquus superior.

Musculi palmæ manus II.

Palmaris brevis. Palmaris longus.

Musculi

Musculi palpebrarum II.

Aperiens palpebrarum rectus. Orbicularis palpebrarum.

Musculi penis II.

Accelerator urinæ. Erector penis.

Musculi pharyngis XII.

Pharyngæus, whose various Orders of Fibres are named as follows.

Cephalo-pharyngæus. Chondro-pharyngæus. Crico-pharyngæus. Glossopharyngæus. Hyo-pharyngæus. Mylo-pharyngæus. Pterigo-pharyngæus. Salpingo-pharyngæus. Stylo-pharyngæus. Syndesmo-pharyngæus. Thyreo-pharyngæus.

Musculi pollicis manus IX.

Abductor. Adductor ad indicem. Adductor ad minimum digitum. Extensor primi internodii. Extensor secundi. Extensor tertii. Flexor primi internodii. Flexor secundi. Flexor tertii.

Musculi pollicis pedis VI.

Abductor. Adductor. Extensor brevis. Extensor longus. Flexor brevis. Flexor longus.

Musculi radii IV.

Pronator quadratus. Pronator teres. Supinator brevis. Supinator longus.

Musculus stapedis. Vid. Mus. aur. intern.

Musculi scapulæ III.

Levator scapulæ. Rhomboides. Trapezius.

Musculi tarsi VI.

Extensor tarsi suralis, vulgo Gastrocnemius & Soleus. Extensor tarsi minor, vulgo Plantaris.

Peronæus

xxviii *An Alphabetical Table of the Parts, &c.*

Peronæus primus. Peronæus secundus. Tibialis anticus. Tibialis posticus.

Musculi testium II. Cremaster. Dartos.

Musculi thoracis XIII.

Cervicalis ascendens. Costarum depressores. Costarum levatores. Diaphragma. Intercostales. Sacro-lumbalis. Scalenus. Serratus inferior posticus. Serratus major anticus. Serratus minor anticus. Serratus superior posticus. Subclavius. Triangularis.

Musculi tibiæ XI.

Biceps. Cruræus. Gracilis. Membranosus. Popliteus. Rectus. Sartorius. Semimembranosus. Seminervosus. Vastus externus. Vastus internus.

Musculus tubæ Eustachianæ.

Musculus tubæ novus, vel Palato-salpingæus.

Musculi vesicæ II.

Detrusor urinae. Sphincter vesicæ.

Musculi uvulæ IV.

Glossostaphylinus. Palato-staphylinus. Salpingostaphylinus. Thyreo-staphylinus.

A N

EXPLICATION

O F T H E

Abbreviated Names of the Authors quoted in this Treatise, with the Title of their Works to which these Quotations refer, and the Names of the Muscles each of them have discovered.

A Quapendent. Hieronimus Fabritius ab Aquapendente, in his Treatise *De auditu*, Patavii 1600. describes the *Musculus externus auris*,

Coiter. Volcherus Coiter, in his *Externarum & internarum principalium humani corporis partium, tabulæ atque anatomiciæ exercitationes observationesque variæ*, Norimbergæ 1573. describes the *Corrugator*.

Cowperi, William Cowper, in his *Myotomia reformatata*, or, *A new Administration of all the Muscles of human Bodies*, London 1694. describes the *Elevator labii inferioris proprius*. *Depressor labii superioris proprius*. *Pterigo-pharyngæus*. *Rectus internus minor*. *Interspinales*. *Spinalis lumborum*. *Extensor pollicis pedis brevis*. *Flexor primi internodii minimi digiti*. His Discovery
of

of the *Costarum depressores* he was so kind as to communicate unto me.

Diemerbr. *Isbrandus de Diemerbroek*, in his *Anatom. corporis humani*, Ultrajecti 1672. describes the *Cervicalis descendens*.

Duvern. *Josephus DuVerney*, in his *Tractatus de organo auditus, continens structuram, usum, & morbos omnium auris partium*, Norimbergæ 1684.. describes the *Musculus auris externus*. *Musculus stapedis*.

Eustach. *Bartholomæus Eustachius*, in his *Treatise De auditus organis*, printed with his *Opuscula anatomica*, Venetiis 1563. describes the *Musculus auris internus*.

Fallop. *Gabriel Fallopius*, in his *Observationes anatomicae*, Venetiis 1562. describes the *Pyramidalis abdominis*. *Aperiens palpebrarum rectus*. *Mylo-hyoidæus*. *Rectus lateralis*. *Pterigoideus externus*. *Capitis par tertium*. *Erector clitoridis*.

Galen. *Claudius Galenus* describes all the Muscles mentioned in this *Specimen*, that have neither a Name nor a Mark affixed to them, in his incomparable Treatises, *De dissectione musculorum ad tyrones*, *De anatomicis administrationibus*, *De usu partium corporis humani*.

Ja. Silv. *Jacobus Sylvius*, in his *Opera medica*, Coloniae Allobrogum 1630. describes the *Massa carnea*, seu *Musculosæ carnis portio*.

Jo. Bapt. Canan. *Joannes Baptista Cananus*, in his *Mus-*

Musculorum humani corporis picturata dissectio,
Ferrariæ 1572. describes the *Palmaris brevis*.

Jul. Cass. Plac. *Julius Casserius Placentinus*, in
his *De vocis auditusque organis historia anatomica*,
Ferrariæ 1600. describes the *Externus auris*.
And in his *Tabulæ anatomicae*, published by
Daniel Bucretius, he describes the *Transver-*
salis pedis.

Riol. *Johannes Riolanus*, in his *Anthropographia*,
Parisiis 1649. describes the *Levator ani ex-*
ternus. *Psoas parvus*. *Anconæus*. *Hypothe-*
nar. *Thenar*.

Spig. *Adrianus Spigelius*, in his *Fabrica corporis*
humani, ex recensione Joh. Anton. Vander Linden,
Amstelodami 1645. describes the *Lingualis*.

Sten. *Nicolaus Steno*, in his *De musculis & glan-*
dulis observationum specimen, Hafniæ 1667.
describes the *Costarum levatores*. *Musculi ad*
sacro-lumbum accessorii.

Valsalv. *Antonius Maria Valsalva*, in his Treatise
De aure humana, Bononiæ 1704. describes the
Crico-pharyngæus. *Glossopharyngæus*. *Hyo-*
pharyngæus. *Thyreopharyngæus*. *Glossostaphy-*
linus. *Salpingostaphylinus*. *Musculus tubæ no-*
vus.

Vesal. *Andreas Vesalius*, in his *Humani corporis*
fabrica, Basilicæ 1543. describes the *Par no-*
num pedis.

The following Muscles, which have this Mark
*** affixed to their Names, were discovered
by

by the Author in his late Application to *My-*
otomy.

Musculus meatus auditorii. Stylo-chondro-hyoidæus.
Chondro-pharyngæus. Mylo-pharyngæus. Sal-
pingo-pharyngæus. Syndesmo-pharyngæus. Pa-
lato-staphylinus. Thyreo-staphylinus. Intertrans-
versales colli. Intervertebrales colli. Intertrans-
versales lumborum. Coccygæus. Duo musculi
vaginæ uteri.

Myographia.

Myographia :

O R, A

DESCRIPTION OF THE MUSCLES.

C H A P. I.

Of the Muscles of the ABDOMEN.

OBLIQUUS DESCENDENS

A RISES by several small Tendons *Origin.*
from the lower Edge of the
fifth, sixth, seventh and eighth
Ribs, and tendinous and fleshy from all
the other inferior Ribs.

Is inserted fleshy into the outer Lip of *Insertion.*
more than one Half of the *Os ilium*, ten-
dinous into the *Peritonæum*, and by two

A Ten-
Prælectio prima.

The Muscles of the ABDOMEN.

Tendons into the *Os pubis*; and, besides, into all the *Linea alba*, and lower Part of the *Os pectoris*, by a broad membranous Tendon.

use. Its Use is to compress all the *Viscera* contained in the *Abdomen*, to pull the Ribs down in Expiration, and to turn the Trunk of the Body to one Side.

In a Dog it arises from the ten inferior Ribs, and membranous from the Top of the Spines of the four upper Vertebrae of the Loins.

OBLIQUUS ASCENDENS

Origin. Arises tendinous from the posterior Part of the Spine of the *Os ilium*, fleshy from the rest of the circular Edge of that Bone, tendinous again from the *Peritoneum*, and from the middle and fore Part of the *Os pubis*.

Insertion. Is inserted fleshy into the lower Edge of the last Rib, and Extremities of the two next above it, and tendinous into the Cartilages of all the rest below the *Sternum*, and into the whole Length of the *Linea alba*.

use. Its Use is much the same with the former, the Action of both being much strengthened by the Decussation and different Course of their carnosus Fibres.

In

In a Dog it arises also from the spinal Processes of the Loins, by a thin tendinous Membrane like the former.

PYRAMIDALIS Fallop.

Arises fleshy from the Middle of the *Os pubis*. *Origin.*

Is inserted by a long Tendon at the Union of the *Musculi transversales*, between the *Recti*, a little below the Navel. *Insertion.*

Its Use is to promote the Discharge of Urine, by pulling the lower Belly downwards, and compressing the Bladder, according to its first Discoverer. *Use.*

In a Dog it is wanting.

RECTUS

Arises from the upper and anterior Part of the *Os pubis* by a thick and short Tendon, and from the same Bone, near the Origin of the *Corpus penis cavernosum*, by a long and small one. It soon becomes fleshy. *Origin.*

Is inserted *tendineo-carnous* into the cartilaginous Extremities of the seventh, sixth and fifth Ribs, near the *Os pectoris*. *Insertion.*

Its Use is to compress the fore Part of the lower Belly, and, according to the different Positions of the Body, to bring the Breast nearer the *Pubis*, and so bend the

the Trunk forewards, or *è contra*, as in raising our Bodies from a decumbent Posture.

In a Dog it is inserted fleshy into the lower Part of the Sternum, and tendinous into all the rest of that Bone.

TRANSVERSALIS

Origin. Arises by a broad and thin Tendon from the transverse Processes of the *Vertebræ lumborum*, fleshy from the inner Edge of the Spine of the *Ilium*, and from the cartilaginous Endings of all the Ribs below the *Sternum*.

Insertion. Is inserted tendinous and fleshy into the *Cartilago ensiformis*, tendinous into all the *Linea alba* and *Peritonæum*, being firmly annexed to a little *Protuberance* in the *Os pubis*, on the Outside of the *Musculus abdominis rectus*.

Use. Its Use is to compress the Sides of the *Abdomen*, and to assist in Expiration.

N. B. 1. By the *Peritonæum*, in my Description of the *Abdominal Muscles*, I understand what Authors call *Ligamentum pubis*; it being nothing but the firm Union of the Tendons of the oblique and transverse *Muscles* with the *Peritonæum*, between the anterior Part of the Spine of the *Ilium* and the *Os pubis*, whereby a

Pro-

Protrusion, or Falling down of the Intestines, &c. in that Place, which has nothing else to secure it, is effectually prevented.

2. These three last named Muscles ought not to be reckoned as so many Pairs, but only as so many single digastrick Muscles, with a broad middle Tendon, and two fleshy Bellies.

3. The *Linea alba* is nothing but Part of the Tendons of these oblique and transverse Muscles appearing in the Interstice of the *Recti*, between the *Cartilago xiphoides* and the *Os pubis*, and adhering firmly to one another in this Place; which strict Union occasions the Whiteness to be more conspicuous here than in any other Part. So that it was only in Compliance with Custom, that I said their Tendons were inserted into this white Line.

4. They are all three perforated a little above the *Os pectinis* to one Side, the two oblique in their tendinous, and the transverse in its fleshy Part, for the Passage of the *Processus peritonei*, receiving the *Vas differens* and the spermatick Vein and Artery, inclosed in a large Membrane distinct from the Elongation of the *Peritonæum*. But, besides these, I always observe a Nerve and an Artery pass that Way from
the

The Muscles of the ABDOMEN.

the *Abdomen* to the *Scrotum*, *Inguen*, and upper Part of the *Femur*, from whence some venal Twigs are remitted thro' the same Holes into that Cavity. The *Cremaster* Muscle does only pierce the two oblique Muscles. The surprising and most useful Contrivance of the Perforations or *Rings* of these Muscles shall be inquired into on another Occasion.

C H A P. II.

Of the Muscles of the TESTES.

EACH *Testicle* has one proper Muscle, and one common to both, called

DARTOS,

Which is a thin muscular Membrane including both the *Testes*.

Its Use is to contract and wrinkle the *Scrotum* by the Action of its fleshy Fibres.

The Muscle proper to each is the

CREMASTER,

Origin. Which arises from the lowest and fore Part of the Spine of the *Ilium*, and from the Conjunction of the *Os pubis* with

with this Bone, by two distinct Beginnings.

Is inserted into the *Tunica vaginalis*, ^{Insertion.} upon which it is spread in several distinct Portions.

Its Use is to draw up and suspend the *Testes*. ^{Use.}

C H A P. III.

Of the Muscles of the PENIS.

THE *Penis* has two Pair of Muscles; the first is very distinct, the last is inseparably united in its Origin and Progress. The *Transversalis penis*, mentioned by *Aquapendens*, is only Part of the *Musculus accelerator urinæ*, arising from the Knob of the *Ischium*, for it is not inserted into the *Cavum ovale*, or Bulb of the *Urethra*, but joins in with this Muscle, of which it makes a second Beginning.

ERECTOR PENIS

Arises tendinous and fleshy from between the *Tubercle* of the *Ischium*, and the Beginning of the *Corpus cavernosum*, and, embracing the whole *Crus*,

Is

The Muscles of the PENIS.

Insertion. Is inserted into the external thick Membrane of the two cavernous Bodies of the *Penis*, near their Union.

Use. Its Use is to pull the *Penis* towards the *Os pubis*, whereby its great Vein is compressed, and the reflux Blood denied its Passage under those Bones, by which Means that Member is erected. *Vid.* the Appendix to Mr. Cowper's excellent Treatise of *Myotom. reformat.*

ACCELERATOR URINÆ

Origin. Arises fleshy from the *Sphincter ani*, and superior Part of the *Urethra*, and tendinous from the *Ischium*.

Insertion. Is inserted into the *Corpus cavernosum*, from near their Beginning to a little below their Union.

Use. Its Use is to compress most adequately the bulbous or largest Part of the *Urethra*, and drive the Blood towards the *Glans* for its Distention.

A Dog has yet another Muscle besides these two, which may be called Transversalis; it is a true digastrick Muscle, having two fleshy Bellies arising from a little round Protuberance in the inferior Part of the Os pubis, on each Side, uniting in a middle Tendon between the Os pubis and the Penis. From the particular Structure of this Muscle,

with

with a cartilaginous Body placed transversely under the *Ossa pubis*, and the great Vein of the Penis running between the Muscle and it, I could easily account for the *Erectio penis* in this Animal, who copulates backwards: But, that being foreign to the Subject in Hand, I will reserve it for a fitter Occasion.

C H A P. IV.

Of the Muscles of the Skin of the *Os OCCIPITIS* and *Os FRONTIS*.

THE Skin of the Head is moved by one Pair of Muscles, and one single digastrick Muscle.

MUSCULUS FRONTALIS VERUS, seu CORRUGATOR, *Coiteri*,

Arises fleshy from the Process of the *Os frontis*, next the inner or great Angle of the Orbit, above the Joining of the *Os nasi*, and superior Process of the *Os maxillare*, with this Bone, from thence it turns obliquely outwards and upwards, and

Is inserted into the fleshy Part of the subsequent Muscle, some of its *Fibrillæ* passing through into the Skin a little higher

Prælectio secunda.

higher than the middle Region of the Eye-Brows.

Use.

Its Use is to smooth the Skin of the Forehead, by pulling it down after the Action of the *Occipito-frontalis*; and, when it acts more forcibly, it serves to wrinkle the Skin of the Front, between the *Supercilia*, as it happens when we frown or knitt the Brows.

This is wanting in a Dog.

OCCIPITO-FRONTALIS

Origin.

Arises fleshy from the traverse Line off the *Occiput*, opposite to Part of the superior Termination of the *Mastoidæus*, and Part of the Beginning of the *Trapezius* next it, and then tendinous from the rest of that Line backwards, arising after the same Manner on the other Side, from thence it goes streight up, and, soon becoming all tendinous, it covers the two parietal Bones, and the *Ossa squamosa*, above the temporal Muscles, its outer Edge being fastned to the *Os jugale* on each Side. This broad Tendon near the *coronal Suture* grows fleshy, and descends with streight Fibres as low as the *Musculi orbiculares*.

Insertion.

Is inserted into the Skin at the Eye-Brows, having sent down between them
a narrow

a narrow fleshy Slip or Elongation, which is continued over the *Ossa nasi* as far as its cartilaginous Part, where its Fibres run off on each Side, and terminate in the Skin above the *Musculus nasi proprius*.

When this digastrick Muscle, which use. covers all the upper Part of the Skull like a Cap, acts, it pulls the Skin of the Head backwards, and at the same Time it draws up and wrinkles that of the Forehead, being antagonized by the *Corrugator*.

This Muscle in a Dog is only Part of the Membrana carnosæ, that covers all the Skull between the Skin and Muscles.

C H A P. V.

Of the Muscles of the EYE-LIDS.

THE *Palpebræ* have two Pair of Muscles ; one is proper to the upper Lid, the other is common to both.

APERIENS PALPEBRARUM RECTUS, *Fallop.*

Arises from the upper Part of the Hole Origin. of the *sphenoidal Bone*, through which the *optick Nerve* passes, between the *Attollens* and the *Obliquus major*.

Is

Insertion. Is inserted by a broad Tendon into the cartilaginous Border of the upper Eye-Lid.

use. Its Use is to open the Eye, by drawing the Eye-Lid up.

ORBICULARIS PALPEBRARUM

Origin. Arises tendinous and fleshy from the Edge of the *Os maxillare*, that makes the lower Part of the Orbit, at the inner Angle of the Eye. Its Fibres are spread upon the under Lid, and a great Part off the *Os mali*, and, surrounding the outer and little *Canthus*, they are continued over the upper Lid, and upper Part of the Orbit, at the great Angle, firmly adhering to Part of the *Os frontis*, and superior Process of the *Os maxillare*.

use. Its Use is to shut the Eye, by bringing down the upper Lid, and pulling up the lower.

N. B. The *Ciliaris Riolani* is only Part of this Muscle next the *Cilia* or *Tarsi*.

In a Dog it arises tendinous from the upper Part of the *Os jugale*; at the external Canthus of the Eye it divides and surrounds each Eye-Lid with its fleshy Fibrillæ, which acting must necessarily pull up both Eye-Lids, bring them nearer one another, and shut them.

C H A P. VI.

Of the Muscles of the EYES.

EACH Eye has six Muscles.

OBLIQUUS SUPERIOR

Arises from the Edge of the Hole that *Origia.*
transmits the optick Nerve tendinous, be-
tween the *Elevator* and *Abductor*, from
thence it runs streight along the *Os pla-*
num to the upper Part of the Orbit, at
the great *Canthus*, where the *Trochlea* is af-
fixed to the *Os frontis*, through which it
passes; and turning backwards

Is inserted tendinous into the *Tunica* *Insertion.*
sclerotis behind the Insertion of the
Attollens.

Its Use is to draw the Globe of the *Use.*
Eye forewards, and to turn its Pupil
downwards.

OBLIQUUS INFERIOR

Arises tendinous from the *Os maxil-* *Origia.*
lare, where it makes the Edge of the
Orbit near its Juncture with the *Os mali*,
and, running obliquely outwards,

Is

Insertion.

Is inserted into the *Sclerotis*, between the Insertion of the *Abductor* and the *optick Nerve*.

Use.

Its Use is to draw the Bulb of the Eye forewards, and turn its Pupil upwards.. The Uses I have assigned to these two Muscles were first advanced by the ingenious and most accurate Anatomist, Mr.. *Cowper*.

ELEVATOR

Origin.

Arises tendinous and fleshy from the Edge of the *Foramen lacerum* near the *Abductor*.

Insertion.

Is inserted into the superior and fore Part of the *Tunica sclerotis* by a thin Tendon.

Use.

Its Use is to lift up the Globe of the Eye.

DEPRESSOR

Origin.

Arises tendinous and fleshy from the lower Edge of the Hole that gives Passage to the *optick Nerve*.

Insertion.

Is inserted by a thin Tendon into the *Sclerotis* opposite to the Insertion of the former.

Use.

Its Use is to pull the Globe of the Eye down.

ADDUC-

ADDUCTOR

Arises tendinous and fleshy from the *Origin.*
Edge of the Hole in the *sphenoidal Bone*,
that transmits the *optick Nerve*, between
the *Obliquus major* and the *Humilis*.

Is inserted by a thin Tendon into the *Insertion.*
Tunica sclerotica where it respects the great
Canthus.

Its Use is to bring the Eye toward the *use.*
Nose.

ABDUCTOR

Arises tendinous and fleshy from the *Origin.*
Foramen lacerum, without the *Orbit*.

Is inserted by a thin Tendon into the *Insertion.*
Sclerotis, where it respects the little
Canthus.

Its Use is to move the Eye outwards, *use.*
from the great to the little Angle.

Besides these six, a Dog has two more,
of which one belongs to the *Globe itself*,
the other to the *Trochlea of the Eye*; the
first is called *Musculus septimus oculi sus-*
pensorius; it arises from the *Margin of*
the *Hole through which the optick Nerve*
passeth into the *Eye*, and is inserted, being
divided into four or five fleshy *Portions*, into
the lower *Part of the Sclerotica*, below the
Termination of the other Muscles. Its Use
is

is to sustain and keep up the Bulb of the Eye, that it may not fall too low, and thereby put a Stress on the Nerve, in this and other Animals that go much with their Heads down, or feed upon the Ground.

The other I call *Musculus trochleæ proprius*, which is a very small Muscle, arising fleshy near the Origin of the *Oblíquus major*, and, soon turning into a slender Tendon, is inserted into the Trochlea, to whose Motions it is subservient. A Description of this cartilaginous Ring will be given at the End of my Comparative Osteology.

C H A P. VII.

Of the Muscles of the Nose.

THE cartilaginous Part of the Nose has one Pair of proper Muscles and three Pair common to it with other Parts.

RINÆUS, *vel* NASALIS,

Origin.

Arises fleshy from the Extremity of the *Os nasi*, and adjacent Part of the *Os maxillare*.

Is inserted into all the Cartilages of *Insercion.*
the *Ala*.

Its Use is to open and dilate the Nostril, *Use.*
by pulling that Part outwards.

The first of the common is an Elongation of the *Occipito-frontalis* already described, and serves to draw the Skin of the Nose upwards and backwards.

The second is Part of the *Elevator labii superioris proprius*, arising from the upper Part of the *Os maxillare*, where it joins the *Os frontis* at the inner *Canthus*.

The third is common to it with the upper Lip, being Part of the *Depressor labii superioris proprius*.

For the Motion of a Dog's flat Nose, which is continued to the very Extremity of the Maxilla superior, there are no proper Muscles.

C H A P. VIII.

Of the Muscles of the Lips.

THE Muscles of the Lips are either common or proper. The common are inserted into the Angles of the Mouth, where the two Lips join, being equally
C useful

useful to both; they are three Pair in Number, and one odd one.

ZYGOMATICUS

Origin. Arises fleshy from the *Os mali*, near its Conjunction with the long Process of the *Os squamosum*.

Insertion. Is inserted near the Angle of the Lips.

Use. Its Use is with its Partner to draw both Lips upwards.

ELEVATOR LABIORUM COMMUNIS

Origin. Arises thin and fleshy from the Hollow of the *Os maxillare*, under the Hole called *Orbiter externus*.

Insertion. Is inserted into the Angle of the Mouth and under Lip.

Use. Its Use is to bring the two Lips upwards.

DEPRESSOR LABIORUM COMMUNIS

Origin. Arises broad and fleshy from the lower Edge of the *Maxilla inferior*, between the *Latissimus colli* and the *Masseter*.

Insertion. Is inserted into the Angle of the Lips.

Use. Its Use is to pull down the Corners of the Mouth.

SPHINCTER

SPHINCTER LABIORUM.

The fleshy Fibres of this Muscle surround the Lips like a Ring, Origin.

Its Use being to constrict and draw both Lips together. Use.

The *proper* belong either to the upper or lower Lip, and are four Pair in Number, two Muscles on each Side to each Lip.

ELEVATOR LABII INFERIORIS PROPRIUS, *Cowperi,*

Arises from the lower Jaw, near the Gums of the *Dentes incisivi*. Origin.

Is inserted into the Skin of the Chin, which it draws upwards, together with the lower Lip. Insertion.
Use.

ELEVATOR LABII SUPERIORIS PROPRIUS

Arises broad and fleshy from all that Portion of the *Os maxillare* that makes the lower Part of the Orbit, immediately above the Hole that transmits the Nerves and Arteries to the Cheeks, and admits their returning Veins, being joined on each Side by a narrow fleshy Slip, the shortest coming from the *Os mali*, near the Origin of the *Zygomaticus*; the longest proceeding from all the upper Process of the first named Origin.

named Bone, where it joins the *Os frontis* at the great *Canthus* of the Eye, and descends by the Edge of the *Ductus lachrymalis*.

Insertion. Is inserted into the upper Lip, sending some *Fibrillæ* to be spread on the *Ala nasii*.

Use. Its Use is to draw that Lip outwards and, when both act in Concert, to pull it upwards.

DEPRESSOR LABII INFERIORIS PROPRIUS;

Origin. Arises fleshy from the inferior and anterior Part of the lower Jaw, called the *Chin*.

Insertion. Is inserted into the under Lip near its *Sphincter*.

Use. Its Use is to pull the lower Lip down and a little outwards.

DEPRESSOR LABII SUPERIORIS PROPRIUS, *Cowperi*,

Origin. Arises thin and fleshy from the *Os maxillare*, immediately above the Gums of the *Dentes incisivi*.

Insertion. Is inserted into the superior Part of the upper Lip and Root of the *Ala nasi*.

Use. Its Use is to draw downwards the Part in which it terminates.

The Lips of a Dog are moved by five Pair of Muscles, and a Sphincter.

The Zygomaticus has a great many of its Fibres spread upon the Buccinator, whereby it is able to draw the Lips more forcibly upwards and sideways.

Elevator labii superioris arises fleshy from the lower or little Angle of the Orbit, growing broader as it descends to its large Insertion into the upper Lip, which it pulls upwards when this Animal snarls, &c.

Depressor labii inferioris comes from about the Middle of the Rostrum or lower Jaw.

If you cut the Gums above the Dentes incisivi of both Lips, you will have a fair Prospect of the Elevator labii inferioris, and the Depressor labii superioris, running as in Man.

C H A P. IX.

Of the Muscles of the CHEEKS.

THE Cheek, called *Gena* and *Bucca*, has no proper Muscles of its own, being provided with two common to it and some other Parts; the first is common to

to it with the Lips ; the second is common to it, the lower Jaw, the Lips, and most Part of the Skin of the Face.

BUCCINATOR

Origin. Arises by two distinct Beginnings on each Side, one tendinous and fleshy from the lower Jaw, between its last *Dens molaris* and the Root of the fore Part of its *Processus coronæ* ; the other is fleshy from the upper Jaw, between its last *Dens molaris* and the *Processus pterigoides*, from whose Extremity also it arises tendinous,, being continued between these two Originations to the *Pterigo-pharyngæus* ; from thence proceeding with streight Fibres,, and adhering to the Membrane that covers the Inside of the Mouth, but without touching the Gums of either Jaw,

Insertion. Is inserted into the Angle of the Lips.

Use. Its Use is not only to move the Cheeks with the Lips, but also to contract the Cavity of the Mouth, by bringing them inwards, and so thrust the Meat between the Teeth for its better Commination.

QUADRATUS GENÆ, *vel* LATISSIMUS

COLLI,

Origin. Arises broad, thin, and membranous, interlaced with Abundance of carnos Fibres,

bres, which in their Ascent do all unite, and make one continued fleshy Substance from the *Sternum*, between the first and second Rib from the *Acromion*, and between these two from the proper or investing Membranes of the *pectoral* and *deltoidal* Muscles.

Is inserted into that Space of the external *Labrum*, or Lip of the lower Jaw, that is between its Commissure and the backmost Origin of the *Depressor labiorum communis*, into the *Buccinator* near the Angle of the Mouth, and membranous into the Skin of the Face. As these two Muscles approach the Chin, they are observed to decussate one another; that is, Part of the Muscle on the Right-Side runs over the other, and is fixed to the lower Jaw on the Left-Side, and Part of the Muscle of the Left-Side runs under the other, and is inserted into the lower Jaw on the Right-Side. *Insertion.*

Its Use is to draw the Cheeks and Skin *use.* of the Face downwards, and to assist the *Digastrick* in opening the Mouth.

In a Dog it is only Part of the Membrana carnosæ, expanded over the Neck and the *Musculus buccinator*.

C H A P. X.

Of the Muscles of the EXTERNAL EAR.

THE Muscles of the Auricle are common or proper; the common proceed either from the middle Tendon of the *Occipito-frontalis*, or from the *Quadratus genæ*, and move this Part according to their respective Insertions, whence they are divided into so many Muscles, and named by Authors from their Use, as *Attollens*, seu *Musculus auriculæ anterior*, *deprimens*, &c.

The proper Muscles of the Auricle, or outer Part of the Ear, are such as arise from the *Os petrosum* and *parietale*, and are inserted into the *Concha* under the common. Their Number is uncertain.

The Muscles subservient to the Motion of a Dog's external Ear are so very numerous, as well as small, that I think it needless to insist on a particular Account of each of them, a Description of two of the most remarkable being sufficient.

Retrahens ad collum arises from the Union of the *Musculi cucullares*, above the second or third spinal Process of the Neck,
and

and ends in the lateral and upper Part of the Concha.

Erigenis arises from the bony Ridge of the Os occipitis, and terminates by three fleshy Portions into the outward Ear; its Use being to erect or prick the Ears.

C H A P. XI.

Of the Muscles of the INTERNAL EAR and AUDITORY PASSAGE.

THE Parts of the internal Ear provided with Muscles are the two little Bones called *Malleus* and *Stapes*; the Hammer has three, and the Stirrop one.

EXTERNUS AURIS *Aquapendent.* vel *Jul.*
Casser. Placent.

Arises fleshy from a Roughness in the *Origin.* upper Side of the *Meatus auditorius* about its Middle.

Is inserted by a long and slender Ten- *Insertion.* don into the upper Process of the *Malleus*, that adheres to the *Membrana tympani*.

Its Use is to draw the Hammer with *Use.* the *Membrana tympani* outwards.

In a Dog it comes from the Os petrosum, opposite to the long Process of the *Malleus*.

INTERNUS AURIS *Eustach.*

Origin. Arises tendinous and fleshy from the Beginning of the cartilaginous and Extremity of the bony Part of the *Tuba Eustachiana*, and, running in a long Channel excavated in the *Processus petrosus*, it grows tendinous as it enters the Cavity of the Barrel, and passing over a little Rising made by the Extremity of this Pipe, near the *Fenestra ovalis*,

Insertion. Is inserted into the posterior Part of the Handle of the *Malleus*, a little from its Head.

Use. Its Use is to pull the Hammer inwards nearer the *Os petrosum*.

N. B. The Bone that some observe to be in the Tendon of this Muscle, is nothing else, in my Opinion, but the Extremity of the long Channel, in which it runs, broke off from the *Os petrosum*, and left adhering to the Tendon.

OBLIQUUS AURIS, *vel* EXTERNUS, *Duvern.*

Origin. Arises fleshy as the former, whence marching backwards through a Channel in the upper and external Part of the *Tuba Eustachii*, without entering the Cavity of the Barrel,

Is

Is inserted into the slender Process of *Infection.*
the *Malleus*, that lies upon the Edge of
that oblique Sinuosity that is most remark-
able in the bony Circle of a *Fetus*.

Its Use is to draw the Hammer fore- *Use.*
ward, nearer that Part of the Temple-
Bone from which in Part it takes its Ori-
gin. Of this Process *Cæcilius Folius* has
given the best Description; in Length it
exceeds that of the *Manubrium malleoli*, and
in Shape it very much resembles a small
Fish-Bone.

In a Dog it may be called *Musculus glandiformis*, or *ovalis*, because it appears like a
glandulous Lump, of an oval or roundish
Figure, which lies in a particular Cavity dug
for it in the *Os petrosum*, near the For-
amen ovale, from the Bottom of which it
springs, and is inserted by a very slender
Tendon.

STAPIDÆUS, *vel* MUSCULUS STAPEDIS,
Duvern.

Arises fleshy from the Bottom of a *Origin.*
Channel excavated in the *Os petrosum*, a-
bout the Middle of the true *Fallopian A-*
queduct laterally.

Is inserted tendinous into the Side of the *Infection.*
Head of the *Stapes*.

Its Use is to draw the *Stapes* upwards. *Use.*

MUSCULUS MEATUS AUDITORII ***

Origin. Arises from one of the discontinued Cartilages of this Passage, and

Insertion. Is inserted into another, which it serves to approximate and draw nearer one another. It is only observable in a large and fleshy Subject.

In a Dog there are several little Muscles which come from one of the protuberating Cartilages of the Concha, and end in another of them, which, by pulling them nearer or drawing them farther from one another may dilate or straiten the Porus acousticus or auditory Tube, for the fitter Reception of Sounds, as Occasion may require.

C H A P. XII.

Of the Muscles of the OS HYOIDES.

THE Bone of the Tongue, called Os hyois, has five Pair of Muscles, and one odd one, which are all common to it with the Tongue and the Larynx.

MYLO-HYOIDÆUS Fallop.

Origin. Arises fleshy and a little tendinous from all

Prælectio tertia.

all the Inside of the lower Jaw, between the backmost *Dens molaris* and the Commissure of the two Bones.

Is inserted into the lower Edge of the Basis of the *Os hyoides*. *Insertion.*

Its Use is to pull this Bone upwards, forewards, and to either Side, according as its Fibres run. *Use.*

GENIO-HYOIDÆUS

Arises tendinous from a rough Protuberance at the Inside of the Chin, or from the fore Part of the lower Jaw, internally. *Origin.*

Is inserted into both the Edges of the Basis of the *Os hyoides*, remitting a fleshy Slip to the Beginning of each of its Processes. *Insertion.*

Its Use is to draw this Bone upwards and forewards. *Use.*

STYLO-HYOIDÆUS

Arises by a round Tendon from near the Middle of the *Processus styloformis*.

Is inserted tendinous into the Basis of the *Os hyois* near its *Cornu*, to which also it often adheres fleshy. *Origin.*

N. B. The carnous Belly of this Muscle is sometimes divided on both Sides for the Passage of the middle Tendon of the Diga- *Insertion.*

Digastrick, sometimes but on one Side only, and sometimes it is unperforated on both Sides.

Use. Its Use is to pull the Bone of the Tongue to one Side, and a little upwards when both act in Concert.

STYLO-CHONDRO-HYOIDÆUS ***, *vel*

STYLO-HYOIDÆUS ALTER,

Origin. Arises fleshy and tendinous from the *Styloide Process*, near the Origin of the *Stylopharyngæus*, and, running under the *Ceratoglossus*,

Insertion. Is inserted into the cartilaginous Appendix of the *Os hyoides*.

Use. Its Use is to assist the former in pulling this Bone upwards and laterally.

CORACO-HYOIDÆUS

Origin. Arises broad, thin and fleshy from the superior *Costa scapulæ*, near its *Sinus* or *Cavitas semilunaris*, as also from some Part of the Ligament that runs from the Edge of this Cavity to the Root of the *Processus coracoides*, thence ascending obliquely, it becomes tendinous between the *Mastoidæus* and *Vena jugularis interna*, but, soon growing fleshy again,

Insertion. Is inserted by a thin Tendon into the Basis.

Basis of the Os hyois, between the Termination of the *Sterno-hyoides* and its *Cornu*.

Its Use is to pull this Bone obliquely *Use.*
downwards.

STERNO-HYOIDÆUS

Arises fleshy and thin from the cartilaginous Part of the first Rib, the upper and inner Part of the Os *pectoris*, and from the adjoining inferior Part of the *Clavicula*. *Origin.*

Is inserted between the Middle of the Basis of the Os *hyoides* and the *Coraco-hyoides*. *Insertion.*

Its Use is to pull that Bone directly *Use.*
downwards.

A Dog has neither the Stylo-chondro, nor the Coraco-hyoidæus, but instead of these it has two more, which are not to be found in the human Body, viz.

Chondro-cerato-hyoidæus, which is a small fleshy Muscle that comes from all the cartilaginous Appendix of the Bone Hyois, and ends into all the shortest Process, or Cornu, that joins the Cartilago thyreoidæa of the Larynx; its Use being to draw them nearer one another. And,

Inio-cerato-hyoidæus. This is a very short fleshy Muscle, which arises from the fore Part of that Process of the Occiput which gives Origin to the Digastrick of the lower

lower Jaw, and is inserted near the Extremity of the longest Process of the Os hyoides, which it pulls backwards.

The Stylo-hyoidæus arises from the Horn of the Os hyoides, near its Adhesion to the Occiput, and, running across the digastric Muscle, is inserted into the Basis of the Bone. It is a long and slender fleshy Muscle.

The Sterno-hyoidæus arises fleshy in common with the Sterno-thyreoidæus, from the Inside of the cartilaginous Part of the first Rib next the Sternum; it parts from the aforesaid Muscle about two Inches, or more, above their united Origin.

C H A P. XIII.

Of the Muscles of the TONGUE.

THE Tongue has four Pair of Muscles, which may be called *proper* because they are all inserted into its own Substance.

GENIO-GLOSSUS

Origin. Arises tendinous from a rough Protuberance in the Inside of the fore Part of the lower Jaw, about the Middle of the Chin.

Insertion. Its Fibres run in three different Directions.

the middlemost terminates about the Middle of the Tongue, the anterior is carried forwards towards its Tip, and the posterior, or last Order, runs obliquely backwards towards the Root of the Tongue, and by a narrow Slip ascends on each Side to the Horns of the *Os hyoides*.

Its Use is to move the Tongue according to the different Direction of its Fibres, *Use.*
e. to pull it forwards and thrust it out of the Mouth, to draw it into the Mouth, or to bring the Tip of the Tongue downwards and backwards.

CERATO-GLOSSUS

Arises fleshy from three different Places. *Origin.*
 Its first Origin is broad and carnosus from the *Cornu* of the Bone *Hyoides*; this is properly the *Cerato-glossus*: Its second Head comes from Part of the Basis of this Bone, and is named *Basio-glossus*: The third Beginning is derived from the cartilaginous appendage of the *Hyoides*, which some call *Chondro-glossus*: These three unite, and their Fibres, running in the same Direction, Are inserted broad and thin near the *Insertion.*
 Root of the Tongue laterally.

Its Use is to draw the Tongue obliquely to one Side; but, if both act at once, *Use.*

E the

the Tongue is pulled directly backwards into the Mouth.

STYLO-GLOSSUS

Origin. Arises tendinous and fleshy from the *Processus styloformis* of the Temple-Bone and often also from a fleshy Ligament that is extended from that Process to the Angle of the lower Jaw.

Insertion. Is inserted into the Side of the Tongue from its Root to near its Middle.

Use. Its Use is to draw the Tongue laterally, but when both act, to pull it upwards and inwards.

In a Dog it arises from the Extremity of the long Process of the Os hyoides.

LINGUALIS

Origin. Arises pretty large and fleshy from the Basis of the Tongue laterally, and runs straight forwards between the *Cerato* and *Genio-glossus* to its Tip, where it is hard

Insertion. to determine whether it ends there, or it runs circularly, after the same Manner, on the other Side, to the Root of the Tongue again.

Use. Its Use is to contract or narrow the Substance of the Tongue, and, at the same Time, to bring it backwards and downwards.

C H A P. XIV.

Of the Muscles of the LARYNX.

THE upper Part or Head of the *Aspera arteria*, called *Larynx*, is made up of five Cartilages, three of which are provided with Muscles.

The *Cartilago thyreoidea*, or *Scutiformis*, has three Muscles on each Side.

HYO-THYREOIDÆUS

Arises fleshy from Part of the Basis, *Origin.*
and almost all the *Cornu* of the *Os hyoides*.

Is inserted into the Outside of a rough *Insertion.*
Line that runs between the Angles of
the *Cartilago scutiformis*.

Its Use is to pull the *Larynx* upwards. *Use.*

STERNO-THYREOIDÆUS

Arises fleshy from all the Edge of the *Origin.*
first Bone of the *Sternum* internally between the Cartilages of the first and second Rib, from both which it receives two small Beginnings.

Is inserted tendinous and fleshy into *Insertion.*
the Surface of the above mentioned rough Line of the Buckler-like Cartilage.

It

It very often remits a Slip to the *Cornu* of the *Os hyois*.

Use. Its Use is to draw the *Larynx* downwards.

In a Dog the Beginning of this Muscle is confounded with that of the Sterno-hyoidæus.

CRICO-THYREOIDÆUS

Origin. Arises fleshy from the fore Part of the *Cartilago cricoides*.

Insertion. Is inserted into the lunated and lower Part of the *Thyreoides*.

Use. Its Use is to dilate the Cavity of the *Larynx*, by drawing the *Scutiformis* outwards, and to one Side.

Each of the *arytænoidal* Cartilages has three proper Muscles, and two common to them both: The common are the two following.

ARYTÆNOIDÆUS MAJOR

Origin. Arises fleshy from one of these Cartilages near its Junction or Articulation with the *Cricoides*, and running tranversely, of an equal Breadth, with streight Fibres,

Insertion. Is inserted into all the same Side of the other Cartilages.

Its

Its Use is to shut the *Rimula*, or the *Chink* called *Glottis*, by bringing these two Cartilages nearer one another.

ARYTÆNOIDÆUS MINOR * * *

Is a very small Muscle which runs upon the Surface of the former, arising from that Part of one of the *Cartilagines arytænoidææ* next the *Cricoides* on one Side, and terminating into that Part of the other *arytænoidal* Cartilage that is farthest from the *Cricoides* on the other Side.

Its Use is to assist the former in its Action, which is much strengthened by this manifest Decussation of Fibres.

CRICO-ARYTÆNOIDÆUS POSTICUS

Arises fleshy from the back Part of the Ring-like Cartilage, and

Is inserted into the *Guttalis* near the following.

Its Use is to open the *Rimula*.

CRICO-ARYTÆNOIDÆUS LATERALIS

Arises fleshy from the *Cartilago cricoides* laterally.

Is inserted into the *Arytænoides* or *Guttalis*, under the Implantation of the superior

rior Order of Fibres belonging to the following Muscle.

Use. Its Use is to open the *Glottis*.

THYREO-ARYTÆNOIDÆUS

Origin. Arises from the whole Length of the internal Concave, and middle Part of the *Cartilago scutiformis*, from whence its Fibres proceed in three different Orders ;

Insertion. the uppermost terminates into the *Guttalis*, near the Insertion of the *Crico-arytænoides lateralis* ; the middlemost, which may be called *Thyreoglottis*, runs up under this, and is spread upon the Membrane that comes between the *Glottis* and *arytænoidal* Cartilage ; the lowermost is inserted into the anterior Angle of this Cartilage.

Use. The superior and inferior Order of Fibres do draw the Cartilage, to which they are fixed, nearer the *Scutiformis*, and thereby do most adequately shut the *Rimula* or *Glottis* ; the middlemost Direction of Fibres may help to pull the *Epiglottis* down when both act, or laterally when one only is contracted.

The fifth Cartilage of the Larynx, called Epiglottis, is furnished with a Pair of Muscles in a Dog, which I call Hyoglottis ; it arises fleshy from the cartilaginous Appendix of the Os hyoides internally, and partly also

also from its Basis hard by the Origin of the Basio-glossus ; from thence each marches obliquely nearer one another to their united tendinous Insertion in the Middle of the upper Part of the Epiglottis, not far from its Tip, which it serves to raise and lift up again after it has been depressed in swallowing.

CH A P. XV.

Of the Muscles of the PHARYNX.

TH O' I take the upper Part of the Oesophagus, or Pharynx, to be only made up of a Pair of Muscles, one on each Side, which I call *Pharyngæus*, whose fleshy Fibres, running in different Directions from distinct and various Originals, do meet and unite upon the Back of the glandulous Membrane of the *Fauces* ; yet, in Imitation of the accurate *Valsalva*, I shall describe each different Order by itself, and name it from the Place whence it arises.

I. CEPHALO-PHARYNGÆUS. This Order of Fibres arises from a little Rising, or Tubercle, in that Process of the *Os occipitis*

tis that joins the *sphenoidal* Bone, not far from its great Hole.

2. CHONDRO-PHARYNGÆUS. * * *

This Order arises from the cartilaginous Appendage of the *Os hyoides*.

3. CRICO-PHARYNGÆUS, *Valsal.* Arises from the *Cartilago cricoides*, or *annularis*.

4. GLOSSO-PHARYNGÆUS, *Valsal.* Arises from the Root or upper Part of the Tongue laterally.

5. HYO-PHARYNGÆUS, *Valsal.* Arises from the *Cornu* or Process of the *Os hyoides*, wherefore I name it *Hyo-cerato-pharyngæus*.

6. MYLO-PHARYNGÆUS * * * Arises from the lower Jaw, near the last *Dens molaris*.

7. PTERIGO-PHARYNGÆUS, *Cowperi*, Arises tendinous and fleshy from the *pterigoid* Process of the *Os sphenoidale*.

8. SALPINGO-PHARYNGÆUS * * * Arises from the Extremity of the bony Part of the *Tuba Eustachii*, commonly called the *Aqueduct*.

9. SYNDESMO-PHARYNGÆUS * * * Arises from the Ligament that ties the *Cornu* of the *Os hyoides* to the Process of the *Cartilago scutiformis*.

10. STYLO-PHARYNGÆUS arises fleshy from near the Root of the *Processus styloformis*.

II. THYREO-PHARYNGÆUS *Valsal.*

The last Order of Fibres arises from that rough Line that is extended between the two Angles of the *thyreoidal* Cartilage, as also from some of its upper Side.

Now, from these various Beginnings *Origin.* does this Muscle of the *Pharynx* arise, and is inserted into the Membrane of *Insertion.* the *Fauces*, where it meets with its Fellow of the other Side. As for its Use, the *Use.* Fibres that spring from the *Larynx*, *Os hyoides*, and *Tongue*, serve to contract the Cavity of the Gullet, and foreward the Aliment, &c. into the Stomach. Those which arise from the other Parts, above described, do all serve to enlarge and dilate the Cavity of the Gullet, in as much as they pull it out on all Sides for the Reception of the Food, &c.

In a Dog the Stylo-pharyngæus arises from near the Extremity of the long Cornu of the *Os hyoides*; and the Salpingo-pharyngæus runs for some Space at a Distance from the *Membrana faucium*, different from what it does in Man.

C H A P. XVI.

Of the Muscles of the UVULA.

THE Gargareon, or Uvula, has four Pair of Muscles.

GLOSSO-STAPHILINUS *Valsal.*

Origin. Arises fleshy from the Side of the Tongue.

Insertion. Is inserted near the Middle of the Uvula laterally.

Use. Its Use is to pull it to one Side, and when both act to bring it nearer the Tongue.

PALATO-STAPHILINUS * * *

Origin. Arises fleshy from the Middle of the *Os palati*, near its Junctionure with its Fellow of the other Side, and, running straight foreward,

Insertion. Is inserted near the Extremity of this duplicated glandulous Membrane, called the *Gargareon*.

Use. Its Use is to pull it forewards and downwards, which Office was always said to be performed by the *Pterigo-staphilinus internus*, till *Valsalva* appeared, who corrected that Mistake, and ascribed the Muscle

Muscle so called to the Tube of the Ear, as shall be shewn hereafter.

SALPINGO-STAPHILINUS *Valsal.* PTERIGO-STAPHILINUS EXTERNUS vulgo,

Arises fleshy from the bony Part of the Tube of the Ear, and

Is inserted into the Basis of the *Uvula*, where it joins Fibres with its Partner Muscle on the other Side.

Its Use is to draw the *Uvula* upwards and backwards.

THYREO-STAPHILINUS * * *

Arises fleshy from the Edge of the upper Part of the *Cartilago thyreoides*, between the *Thyreo-pharyngæus* and the *Membrana faucium*; from thence it ascends

straight upwards, being much dilated as it approaches the *Uvula*, upon the upper Side of which it is spread very broad.

And here it is not easy to determine, when the Membrane that covers it is removed, whether it unites with its Partner, or if its Fibres surround the *Gargareon*, and then descend to the upper Part of the *Cartilago scutiformis* on the other Side.

In Deglutition, when this Pair of Muscles act, the *Foramina narium* are in a great

a great Measure shut, to hinder the passing of any Thing through the Nose that is taken in at the Mouth.

In a Dog between the Tonfils are placed two spongy Bodies, like Teats, at a little Distance from one another, formed of a Production or Folding of the glandulous Membrane that lines the Mouth, and in all Respects seem analagous to that Part in Man; each of them is provided with two Muscles, one to pull them down, which arises and is inserted like the Glosso-staphilinus in Man; the other draws them upwards from the Passage into the Nose. It arises, proceeds, and is inserted like my Palato-staphilinus, being a very long and slender Muscle.

C H A P. XVII.

Of the Muscles of the TUBA EUSTACHIANA

THE Canal of Communication between the Mouth and Barrel of the Ear, *Aquæductus Fallopii vulgo*, is, by that accurate Anatomist *Antonius Valsalva*, called *Tuba*, from its Figure, and *Eustachiana* from its first Discoverer *Bartholomæus Eustachius*; for to dilate and keep it open he describes a new Muscle; for he

first

first found out that the Muscle called *Pterigo-staphilinus internus*, and *Spheno-pterigo-palatinus*, does not belong to the *Uvula*, but unto this Passage.

MUSCULUS TUBÆ NOVUS *Valsal.* vel
PALATO-SALPINGÆUS ***

In my late Inquiries into the muscular Structure of the *Fauces*, I have always observed that this Muscle

Arises broad and tendinous from the *Origin.*
Edge of all the lunated Part of the *Os palati*, several of its Fibres being spread upon the Membrane that covers the *Foramen narium*; then, growing into a small thin Tendon, it is reflected about the Hook-like Process of the inner *Ala* of the *Processus pterigoides*; but, soon turning into a narrow and thin fleshy Belly, it runs close along the Inside of the *Musculus pterigoidæus internus*, and

Is inserted carnos into all the membranous, fleshy and cartilaginous Part of the Tube. *Insertion.*

Its Use is to dilate and keep open this Channel, as *Valsalva* first has most ingeniously took Notice. *Use.*

Long before the excellent Treatise of this Author fell into my Hands, I demonstrated a Muscle something analogous to this in a Dog,

*The Muscles of the TUBA EUSTACHIANA
Dog, which I name, with respect to its O-
rigin, Progress and Termination,*

TYMPANO-PETROSO-SALPINGO-
PTERIGO-PALATINUS,

*Arises from the Os petrosum within the
Cavity of the Tympanum, or Barrel, opposite
to the Musculus ovalis, and, going out by the
Side of the Ductus a palato ad aurem, to
the membranous and fleshy Part of which it
firmly adheres, becomes carnous, and continuess
so till it arrives at the sharp Wing-like Pro-
cess of the Os sphenoidale, where it grows
tendinous; and, being reflected over the same,
its Fibres are again dilated and expanded over
the Membrane that covers the Slits or Fo-
ramina narium, where it seems to join
with its Fellow on the other Side.*

*The Use of this Muscle is to compress the
palatine Glands that ly above it in great
Clusters and Heaps, by pulling up the Mem-
brane; which is a very useful Contrivance to
foreward the Secretion of their salival Juices,
that are of so great Use in Time of Mastica-
tion, for softening the hard Bones, and such
like Substances as this Animal usually feeds
upon, and farther for promoting their Dissol-
ution in the Stomach; besides, it may also be
subservient to the Dilatation of the Eustachi-
an Tube.*

C H A P. XVIII.

Of the Muscles of the HEAD, appearing or situate in the fore and lateral Parts of the Neck.

THE Head has twelve Muscles on each Side; five offer themselves to be described in this Position of the Body, the rest appearing when the Subject lies prone.

MASTOIDÆUS

Arises tendinous, and sometimes a little *Origin.* fleshy, from the upper Part of the *Os pectoris*, and carnosus from near one Half of the *Clavicula* next it.

Is inserted, by a thick and strong *Insertion.* Tendon, into the Point or fore Part of the *Processus Mastoidæus*, and by a broad and thin tendinous Expansion, running obliquely upwards and backwards into the rest of that Process, and the adjacent Part of the *Os petrosus* externally, hard by the *lamdoidal Suture*. When this acts *use.* the Head is turned to the opposite Side, and when both act together they bend the Head forwards.

In a Dog it arises by an acute tendineo-car-

carnous Beginning from the upper Part of the Os pectoris, and, growing into a thick and fleshy Belly, continues united with its Fellow half Way up the Trachea; then receding from one another, each marches obliquely to its double Termination, one by a round Tendon into the Edge of a Cavity made behind the bony Part of the Meatus auditorius, the other by a broad, thin and membranous Tendon, into the lateral Part of the Os occipitis.

RECTUS INTERNUS MAJOR

Origin. Arises from the anterior Points of the transverse Processes of the third, fourth, fifth and sixth *Vertebræ* of the Neck, by so many double Tendons, which soon become fleshy.

Insertion. Is inserted into the anterior Process of the *Os occipitis*, near its Conjunction with the *Os sphenoides*.

Use. Its Use is to bend the Head forewards.

In a Dog it arises tendineo-carnous from the fore and internal Part of all the transverse Processes of the Neck, except that of the first, on the Inside of which it is reflected in its Ascent to the Head, where it terminates in a little Dimple made in the occipital Bone.

RECTUS

RECTUS INTERNUS MINOR *Cowperi,*

Arises fleshy from the fore Part of the *Origin.*
Body of the first *Vertebra colli.*

Is inserted near the Root of the *condy-* *Insertion.*
loide Process of the *Occiput* under the for-
mer.

Its Use is to nod the Head forewards. *Use.*

RECTUS LATERALIS *Fallop.*

Arises fleshy from the transverse Process *Origin.*
of the first *Vertebra colli.*

Is inserted partly into the *Os occipitis,* *Insertion.*
and partly into the *Os temporis,* near the
Processus mammillaris.

Its Use is to nod or bend the Head a *Use.*
little to one Side.

MUSCULUS CAPUT CONCUTIENS

Arises fleshy from the oblique Process *Origin.*
of the second and third *Vertebrae colli,* and,
ascending obliquely backwards,

Is inserted near the Root of the trans- *Insertion.*
verse Process of the first *Vertebra.*

Its Use is to shake the Head; for, the *Use.*
first *Vertebra* being thereby pulled to one
Side, the Head must of Necessity obey
that Motion, by virtue of its Articulation
with the same.

In a Dog it is yet much more conspicuous arising by two fleshy Heads from the fore Part of the oblique Process of the second Vertebra colli, and by one from the third which uniting ascend obliquely, and terminate into the transverse Process of the first, between the Levator scapulæ major, and the Obliquus inferior.

C H A P. XIX.

Of the Muscles of the NECK that lie on its fore Part.

THE Neck, or Collum, has six Muscles on each Side, which I distinguish into *common* and *proper*. The *proper* are such whose Use is confined to the *Vertebræ* of the Neck only, as the *Interspinales*, the *Intertransversales*, and the *Intervertebrales*; the *common* are equally subservient to the Motions of the Neck and Head. Of all these there is only one Pair that appears in this Posture of the Body.

LONGUS

Origin.

Arises tendineo-carnous from the Bodies of the four or five superior *Vertebræ* of the *Thorax* laterally.

Is

Is inserted into the fore Part of the four *Origin.*
lowermost *Vertebræ* of the Neck, by so
many small Tendons covered over with
Flesh; into the third *Vertebra* by a small
Tendon; into the second by a very long
and broad one; and into the first by one
that is rounder, but not so large, being
fleshy on both Sides: It is also fastened to
some of the transverse Processes of the
Neck, near their Roots, by small Ten-
dons.

Its Use is to bend the Neck to one Side, *Use.*
but if both act to bring it directly fore-
wards.

In a Dog it appears as it were divided
into as many distinct Muscles, by tendinous
Lines, as there are *Vertebræ* in the Neck.

N. B. The *Scaleni* belong to the *Tho-*
rax.

C H A P. XX.

Of the Muscles of the LOWER JAW.

THE *Maxilla inferior* has five Pair of
proper Muscles, and one Pair com-
mon to it with the Cheeks, &c. viz.
The *Quadratus genæ*, called, by *Galen*, *Pla-*
usima myoides, already described.

TEM-

TEMPORALIS

Origin. Arises fleshy from the anterior and lower Part of the parietal Bone laterally, from all the *Pars squamosa* of the Temple Bone, from a little Rising in the lateral Part of the *Os frontis*, and from the external Part of its Process, from Part of the *Os maxillare* internally adjoining to it, and from the upper Part of the lateral Process of the *sphenoidal* Bone: From these distant Origins its fleshy Fibres tend towards the *Os jugale*, under which they pass.

Insertion. Is inserted tendinous into the upper Part of the *Processus coronæ*, in the Duplicature of which Tendon this *Processus* is inclosed as in a Sheath, being continued down all its fore Part to near the last *Dens molaris*, and tendinous and fleshy into the posterior Part of this Process, as far back as its Neck.

Use. Its Use is to pull the lower Jaw upwards.

In a Dog it is a very thick and strong Muscle, to the Bulk of which the Bigness of its Head is much owing. It arises fleshy from the Knob of the Occiput, the Ridge or Eminence between the two parietal Bones, and some Part of the *Os frontis* adhering to the cartilaginous Ligament that fences the upper

upper Part of the Orbit, the Bone being here discontinued.

N. B. I have several Observations relating to the Structure of the temporal or crotaphite Muscles, which I design to communicate, with many more, on a proper Occasion.

MASSETER

Arises by three tendinous and fleshy *Origin.* Heads, which run in different Directions. The first comes from the *Os maxillare*, where it joins the *Os mali*, and from all the Edge of the last named Bone, which makes the Ball of the Cheek. The second

Springs from the Process of that Bone, and the anterior Part of the *Apophysis* of the *Os squamosum*; the Fibres of these two Beginnings intersect one another. The third Head

Descends from the remaining Part of that Process of the Temple-Bone. The first two Heads are

Inserted into the inferior and external *Insertion.* Part of the lower Jaw, from the Angle to near its Middle. The last Head runs down streight, and terminates Midway between the Angle and Roots of the two Processes of the lower Jaw externally.

Its

Use.

Its Use is to pull the Jaw upwards, and by reason of the above mentioned Decussation, to move it backwards and forwards, for the better chewing and grinding of the Meat.

In a Dog it arises from most Part of the Os jugale, and by a strong Tendon from a Protuberance in the Maxilla superior, a little above the last Dens molaris save one.. Is inserted into a sharp Process on the Angle of the lower Jaw below the Condyle.

DIGASTRICUS

Origin.

Arises tendineo-carnous from the Sides of a considerable *Sulcus* excavated near the Root of the *Mastoidal* Process internally; its middle Tendon sometimes passes through the *Stylo-hyoidæus*, but always through a Ligament that comes from the *Os hyoides*, to which Bone it is also fastened by tendinous Fibres.

Insertion.

Is inserted tendinous and fleshy into the Edge of the lower Jaw, near its *Commissure*, above the *Mylo-hyoidæus*.

Use.

Its Use is to pull the lower Jaw downwards, being assisted by the *Latissimus colli* when both act; but when one is only contracted, the *Maxilla* is moved outwardly to one Side.

In

In a Dog it has but one Belly, which is very thick and large, arising fleshy, interspersed with tendinous Fibres from an acute bony Process between the *Processus mammillaris* and the Condyle of the Occiput, and terminates about the Middle of the Maxilla by a large Insertion.

PTERIGOIDÆUS INTERNUS

Arises by tendinous and fleshy Fibres Origin. from the inner and upper Part of the largest Wing of the *pterigoidal* Process, possessing all that Space or Cavity between the two Wings; besides, it has a second Origin from that Part of the *Os palati* that is engaged between these two *Alæ*.

Is inserted into the inferior Part of the Insertion. Lower Jaw, near its Angle, internally.

Its Use is to draw the Jaw to one Side, Use. but if both act in Concert, they must assist the temporal Muscle in drawing it up.

PTERIGOIDÆUS EXTERNUS *Fallop.*

Arises by two distinct Beginnings, one Origin. tendineo-carnous, from the Edge of the external or broadest Wing of the *Processus pterigoides*, and from Part of the *Os maxillare* adjoining to it. The other is fleshy, from two or three Asperities in the lateral Process of the *Os sphenoidale*, near the

the Slit that transmits the Blood-Vessels &c. to the Eye ; as also from Part of the *Os squamosum* near the Cavity that receives the Condyle of the Jaw.

Insertion. Is inserted into a Cavity in the Neck of the *Processus condyloides* internally, some of its Fibres running up upon the Membrane that fastens the moving Cartilage to the said Bone.

Use. Its Use is to pull the lower Jaw forwards, and thrust the Teeth out beyond those of the upper Jaw.

Because in a Dog these two pterigoidæ Muscles do both arise from the same Side of the Processus aliformis, I chuse to call the first major, and the second or last described minor, with respect to their different Bigness.

C H A P. XXI.

Of the Muscles of the THORAX that appear on its fore Part, the Body lying supine.

R Espiration consists in the alternate Dilatation and Contraction in the Cavity of the *Thorax*, or Chest ; which two necessary Motions are chiefly performed by

by thirteen Pair of Muscles; of which some dilate and widen the *Thorax*, by pulling the Ribs upwards and outwards in Inspiration, for the Reception of the Air into the Lungs; others contract and narrow its Capacity by pulling them downwards, for the Expulsion of the Air from the Lungs; and again, some assist in both these Actions, as the *Diaphragm* does.

SCALENUS.

This may be divided into four distinct Muscles. The first, or that next the Gullet, arises tendinous from the fourth, fifth and sixth transverse Processes of the Neck, and

Is inserted tendineo-carnous into the upper Side of the first Rib, near its Cartilage.

The second arises from the second, third, fourth, fifth and sixth transverse Processes of the Neck, by so many Tendons, and

Terminates into the first Rib, some Part of it being expanded over the fourth

The third arises from the fifth and sixth transverse Processes of the Neck, and

H

Is

Insertion. Is inserted into the upper Edge of the second Rib.

Origin. The fourth comes from the sixth and seventh transverse Processes of the Neck.

Insertion. Is inserted into the first Rib, near its Articulation with the *Vertebra*.

Use. They all assist in the Elevation of the Ribs, and widening of the Chest.

These Muscles in a Dog differ from the human in their Number and Insertions; for there is but three of them, and the Insertion of the first or innermost is into the first Rib, that of the second or middlemost, which is broad, fleshy and thin, is into the fifth or sixth Rib, counting from above downwards.

N. B. What Galen, Vesalius, and others reckon as the upper Part or Insertion of the *Rectus abdominis* in Apes, Monkeys, Dogs, &c. I have discovered to be a very distinct Muscle, which arises fleshy from the first Rib, and, turning tendinous, is inserted into the *Os pectoris*, under the Tendon of the *Rectus*, the Fibres of which are observed to intersect one another. I call it, *Musculus in summo thorace situs*.

SUBCLAVIUS

Origin. Arises tendinous from the *Clavicula*, just by its Connexion with the upper Part of the *Processus coracoides scapulae*, between

two

Two Ligaments extended from that Process to the Clavicle; it soon becomes fleshy, and adheres to all the inferior Part of that Bone, near the Extremity of which it runs off obliquely, and, growing tendinous,

Is inserted into the superior Part of the first Rib, near the Ligament that connects the Clavicle to the same. *Insertion.*

Its Use is to pull the first Rib upwards. *Use.*

This is wanting in a Dog.

INTERCOSTALES

Arise from the lower Edge of each superior Rib, and *Origin.*

Terminate in the upper Edge of each inferior Rib; that is, the *Externi* run obliquely from the back Part forewards, and the *Interni* from the fore Part backwards, their Fibres intersecting one another, not unlike the two Strokes of the Letter X. *Insertion.*

They both serve to dilate the Capacity of the Thorax. *Use.*

TRIANGULARIS

Arises fleshy and a little tendinous from all the Length of the *Cartilago ensiformis* laterally, and from the Edge of the lower Part of the *Os pectoris*, from whence its *Origin.*
Fi-

Fibres ascend obliquely upwards and outwards.

Insertion. Is inserted into the cartilaginous Endings of the fifth, fourth and third true Ribs, near their Conjunction with the Bones.

Use. Its Use is to contract the Cavity of the Thorax, by depressing the cartilaginous Part of these Ribs.

In a Dog this Pair of Muscles is much larger than in Man; and it is not improbable that in this Animal the Discharge of Part of the superfluous Serum of the Blood (carried off in Man by the excretory Ducts of the miliary cutaneous Glands, which a Dog is destitute of) by Halitus, or by a more plentiful Secretion in their salival Glands, may be much promoted by the joint Action of these Muscles; for we may observe, after a great Fatigue, or any accelerated Motion of the Blood, while this Creature lies or runs with its Tongue lolling out, and breathes prodigiously fast, there is a great deal of Saliva separated.

DIAPHRAGMA

Is made up of two Muscles. The superior

Origin. Arises by two fleshy Beginnings from the Extremity of the *Cartilago ensiformis* laterally, from Part of the Cartilages of the

the

the seventh Rib, and from the lower Edge of the cartilaginous Endings of all the inferior Ribs, and the bony Part of the last. The inferior Muscle

Arises by two long Tendons from the *Origin.* Middle of the fore Part of the third *Vertebra lumborum*, as also fleshy from the Body of the first *Vertebra* laterally, and from the transverse Process of the same; both these join in a middle Tendon. The *Midriff* is perforated in its tendinous Part by the ascending *Vena cava*, and in the fleshy Part of the superior Muscle by the descending *Gula* and *Par vagum*. Between its two tendinous Productions, as they call them, the great Artery descends, and the *Ductus thoracicus* ascends from the *Receptaculum chyli*. Between these Tendons on each Side, and the Body of the first *Vertebra lumborum* laterally, there is a Fissure through which the *intercostal Nerves* descend, and the *Vena azygos*, proceeding from the *Cava* below the *Emulgent*, ascends on the right Side. Between its Adhesion to the Side of this *Vertebra* and its transverse Process, it makes as it were an Arch with a tendinous Border, under which the upper Part of the *Psoas* comes from the last *Vertebra dorsæ*, and the Tendon of the

Qua-

Quadratus lumborum passes that Way to its Termination there.

use. In Inspiration its superior Surface is relaxed, and becomes more plain, whereby the Cavity of the *Thorax* is enlarged to give more Liberty to the Lungs to receive the Air, and the *Viscera* of the *Abdomen* are compressed for the Distribution of the *Chyle*, &c. In Expiration its Surface is convex towards the *Thorax*, whereby its Cavity is lessened, and the Air expelled out of the Lungs.

In a Dog the inferior Muscle of the Diaphragm arises by four Tendons, two short and two long.

COSTARUM DEPRESSORES PROPRII,

Cowperi,

Origin.

Arises tendinous from the upper Part of the Rib, near its Junction with the transverse Process of the *Vertebra*; but, soon spreading into a broad and thin fleshy Belly, they march obliquely upwards under the *Pleura* over one Rib, and terminate into that next above it; in Number they are ten, being expanded all over the Inside of the Ribs, from the Back to near their Middle.

use. Their Use is to depress the Ribs. Mr. *Cowper* discovered these Muscles sometime ago,

ago, and having favoured me with his Observation, I have named them, as above, from their Use.

C H A P. XII.

Of the Muscles of the BLADDER OF URINE.

THE *Vesica urinaria* has two Muscles.

SPHINCTER

Is only a few small orbicular fleshy Fibres, placed under the external Coat of the Bladder, round its Neck.

DETRUSOR URINÆ.

This Muscle is only the second Coat of the Bladder, composed of muscular Fibres, which run in different Directions, upon the Contraction of which the Neck of the Bladder opens, and the Urine is forcibly squeezed out.

C H A P.

Prælectio quarta.

C H A P. XXIII.

Of the Muscles of the ANUS.

THE Extremity of the *Intestinum rectum*, called *Anus* and *Podex*, is provided with five Muscles, two Pair called *Levatores*, and a single one, which is its *Sphincter*.

LEVATOR MAGNUS, seu INTERNUS,
Origin. Arises fleshy from the *Os pubis* near the lower Part of its Commissure internally from thence it ascends obliquely to the *Os ilium*, from which its Origination is continued as far back as the *Os sacrum* and tendinous and fleshy from the sharp Process of the *Ischium*. From this large Beginning its Fibres contract as it descends over the *Marsupialis*, having its Surface which respects the Cavity of the *Abdomen* all covered with a tendinous Membrane and, uniting with its Fellow on the Back of the *Intestinum rectum*, which they cover on all Sides, except where the *Prostates* and Bulb of the *Urethra* adhere to it.
Insertion. Is inserted into the *Sphincter*, its upper Part being firmly annexed to the *Os coccygis*.

Its Use is to draw the *Anus* upwards *use.*
after the Evacuation of the Excrements,
and in some Measure to shut it also; at o-
ther Times it keeps this Gut from falling
too low, which always happens in a Re-
laxation of its Fibres in a Palsy.

*In a Dog, before it terminates, it appears
divided into three or four Portions, one of
which on one Side leaves the Rectum, and
is inserted into the Cauda, which it depresses
after the Animal has thrust out its Excre-
ments.*

LEVATOR PARVUS, seu EXTERNUS,
Riol.

Arises tendinous and fleshy from the *Origin.*
Protuberance or Knob of the *Ischium*,
from whence it runs transversely to its Ter- *Insertion.*
mination into the *Sphincter Ani*, near the
Bulb of the *Urethra*.

Its Use is to assist the former. *Use.*
This is wanting in a Dog.

SPHINCTER.

The fleshy Fibres of this Muscle en- *Insertion.*
compass the lower End of the *Intestinum*
rectum, to the Breadth of about an
inch, being forewards connected to the
Accelerator urine, and backwards to the
Levator major.

I

Its

Use. Its Use is to hinder the involuntary Excretion of the *Fæces*, by shutting up or closing the Passage of the *Rectum*.

In a Dog its circular Fibres do not embrace the Extremity of the Rectum so high as in Man; and the Reason of it is plain, because the Pressure and Weight of the Fæces alvinæ is not so great on this Part in a Dog, the Position of its Body being prone, or horizontal, as it must be in Man, whose Posture is erect.

C H A P. XXIV.

Of the Muscles of the SCAPULA.

THE Shoulder-Blade is moved by three Pair of proper Muscles, and two Pair common to it with the *Thorax*, viz. the *Serratus major anticus*, and *Serratus minor anticus*.

TRAPEZIUS, seu CUCULLARIS,

Origin. Arises by a thick and short Tendon from the lower Part of a Protuberance on the *occipital* Bone backwards, and from the rough Line that is extended from thence towards the *Processus mammillares* by a thin membranous Tendon which

covers some Part of the *Complexus* and *plenius* ; besides, it arises tendinous from the *Spine* of the last *Vertebra* of the Neck, and from all the *Spines* of the Back, except the two lowermost.

Is inserted fleshy into the broad and posterior Part of the *Clavicula*, tendineo-cartilagenous into one Half of the *Acromion*, and into almost all the *Spine* of the *Scapula*. *Insertion.*

According to the three Directions of its Fibres it moves the *Scapula* variously ; for the straight Ones draw it directly backwards, the obliquely descending pull obliquely upwards, and its obliquely ascending bring it obliquely downwards and backwards. *Use.*

In a Dog its superior Origin comes from the Ligamentum colli that is below the Rise of the *Levator humeri proprius* ; that Part of it which resembles the *Cuculla* brings from about the Middle of the *Vertebrae* of the Back ; that Series of Fibres which pulls the *Scapula* directly backwards, unites with the upper triangular Part of the Muscle by a thin Tendon.

The *Clavicle* being wanting in a Dog, has no Insertion there.

ELEVATOR, seu MUSCULUS PATIENTIÆ,

Arises fleshy from the first, second, third, and sometimes fourth transverse Processes *Origin.*

Processes of the *Vertebræ colli*, by so many distinct Slips, which soon afterwards all unite.

Insertion. Is inserted fleshy into that Part of the *Basis scapulæ* that is between its Spine and superior Angle.

Use. Its Use is to pull the *Scapula* upward and a little forewards.

The Elevation of this Part in a Dog is performed by two Muscles, viz.

Levator major, vel anterior, arises fleshy from the broad transverse Process of the first Vertebra colli. Is inserted in the upper Part of the Spina scapulæ, near its Extremity which makes the Acromion in Man.

Levator scapulæ minor, vel posterior, arises tendinous from the Occiput, near its Ridge, and, descending close by the long Portion of the Rhomboides, is inserted by small Tendon into the Basis of that Bone, near its upper Angle.

RHOMBOIDES

This Muscle I find always divided into two distinct fleshy Portions, joined by an intervening Membrane. The uppermost *origin.* which is the least, arises tendinous from the last spinal Process of the Neck, and some Part of the *Ligamentum colli* next above it; the inferior Part of this Muscle arises

arises tendinous from the *Spines* of the four or five superior *Vertebræ dorsi*. The upper Part terminates into the Basis of the *Scapula*, partly above, but chiefly below its *Spine*; and the inferior Part is inserted into almost all the remaining Part of the Basis.

Its Use is to draw the *Scapula* obliquely *upwards*, and directly backwards.

In a Dog it arises fleshy from all the Ligamentum colli, which, growing broader as it descends, unites with that Portion coming from the Spines of the Back, near the upper Angle of the Scapula.

C H A P. XXV.

Of the Muscles of the THORAX, that appear in Dissection the Body lying prone.

IN the Description of the *Musculi thoracis*, which appear on its fore Part, I forgot to premise their Division into proper and common. The Use of the first is confined only to the Chest, but the latter are subservient to other Parts, as well as it. Thus the *Serrati antici* contribute to the Motions of the *Scapulæ*, the *Sacro-lumbi* to the Extension of the Back, and the *Scaleni*

Scaleni move the Neck towards the Shoulder, or first Rib.

SERRATUS MAJOR ANTICUS

Origin. Arises fleshy from the whole Basis of the *Scapula* internally, between the Insertion of the *Rhomboides*, and the Origin of the *Subscapularis*, being folded as it were about the two Angles of the *Scapula*.

Insertion. Is inserted into the eight superior Ribs by an equal Number of fleshy *Digituli*.

Use. Its Use is to dilate the *Thorax*, by pulling up the Ribs, and, according to some, to move the *Scapula*, into which (they alledge) it is inserted, forwards and downwards.

In a Dog it arises fleshy from the five inferior transverse Processes of the *Vertebræ colli* by so many different Heads, and tending neo-carnous from the seven superior Ribs. The first, or uppermost Order of its Fibres, run obliquely downwards to their Insertion into Part of the Basis *scapulæ* internally. The second Order that comes from the Ribs ascend obliquely, and are implanted, not only into the Basis *scapulæ*, but also broad and fleshy into Part of its concave Side. Its Use in this Animal is peculiar to the *Scapula*, which it moves according to the various Direction of its Fibres; and, besides, it keeps the

the Shoulder-Blade from starting out, or rising up too high, when this Animal stands or runs.

SERRATUS MINOR ANTICUS

Arises tendinous from the *Processus* Origin.
coracoides scapulæ, but soon grows fleshy and broad.

Is inserted tendineo-carnous into the Insertion.
lower Edge of the bony Part of the third, fourth and fifth Ribs.

Its Use is either to assist the former, or Use.
to draw the *Scapula* forewards.

This is wanting in a Dog.

SERRATUS SUPERIOR POSTICUS

Arises by a broad and thin Tendon, Origin.
from the lower Part of the *Ligamentum colli*, or rather from the tendinous Union of the *Splenii*; from the acute Process of the *Vertebra* of the Neck, and from two or three of the uppermost of the Back.

Is inserted into the second, third and Insertion.
fourth Ribs by as many particular fleshy Slips.

Its Use is to expand the *Thorax* in the Use.
Elevation of the Ribs.

SER-

SERRATUS INFERIOR POSTICUS

Origin. Arises by a broad thin Tendon from the spinal Processes of the two inferior Vertebrae of the Back, and from as many or more, of the superior of the Loins.

Insertion. Is inserted fleshy into the lower Edge of the three or four inferior Ribs, tho' seldom into the last, but at a greater Distance from the *Obliquus abdominis externus* than will admit of any Indentation between those two Muscles.

Use. Its Use is to depress so many of the Ribs, or at least to accelerate their Motion downwards.

In a Dog the Serratus superior posticus arises by a thin Tendon from the lower Part of the Ligamentum colli, its last acute Process, and from the eight superior Processes of the Back. Its Insertion is into the nine uppermost Ribs, excepting the first, by so many distinct fleshy Digituli. Its Tendon joins in with that of the Serratus inferior posticus, and so makes as it were a strong tendinous Bandage, which, keeping the subjacent Muscles very close together, does vastly strengthen them in their Actions.

SACRO-LUMBALIS

Arises outwardly tendinous, and in- ^{Origin.}
wardly fleshy, in common with the *Longissimus dorsi*, from the single uppermost
Spines of the *Os sacrum*, from the posterior
Part of the *Spine* of the *Ilium*, from
the inferior *Spines* of the *Vertebræ lumborum*, and by small Tendons from near the
Roots of their transverse Processes.

Is inserted by as many long and thin ^{Insertion.}
Tendons as there are Ribs, each of which
terminates into the third Rib, where it be-
gins to be curved, above its parting from
the Body of the Muscle, only its upper-
most and last Tendon ends in the trans-
verse Process of the seventh *Vertebra colli*.

Its Use is to pull the Ribs down. ^{Use.}

N. B. From the upper Part of the six
or seven lower Ribs arise so many small
Bundles of thin tendinous and fleshy
Fibres, which, after a very short Progress,
terminate in the inner Side of this Muscle.
Steno calls them *Musculi ad sacro-lumbum
accessorii*.

CERVICALIS DESCENDENS *Diemerbr.*

Arises fleshy from the third, fourth, ^{origin.}
fifth and sixth transverse Processes of the
Vertebræ colli, and

Insertion. Is inserted into the third, fourth, fifth, sixth and seventh Ribs, between the *Sacro-lumbalis* and *Longissimus dorsi*.

Use. Its Use is to draw the Ribs upwards in the Act of Inspiration.

COSTARUM LEVATORES *Sten.*

Which I name *Levatores proprii*, to distinguish them from the other Muscles that perform the same Office. They

Origin. Arise tendinous and fleshy from the transverse Processes of the *Vertebræ* of the Back, whence, being carried oblique-

Insertion. forewards, they soon terminate in the upper Side of all the Ribs except the first.

Use. Their Use is to lift up the Ribs, and dilate the Chest, which they do most effectually, because the Processes of the *Vertebræ* serve as a *Fulcimen* to the Motion.

C H A P. XXVI.

Of the Muscles of the HEAD, that appear in the prone Position of the Body.

SPLenius

Origin. **A** Rises by a great many long and thick Tendons from the five superior spines

nal Processes of the *Vertebrae* of the Back, tendinous and fleshy from the last of the Neck, and entirely tendinous from the *Ligamentum colli*; or rather the Tendons of the two *Splenii* unite here inseparably, only about the second *Vertebra* of the Neck they recede from one another, so that Part of the subjacent Muscle may be seen.

Is inserted by one Tendon into the transverse Process of the second *Vertebra colli*, and by two, for the most Part, into that of the first, and tendineo-carnous into the under and fore Part of the *Processus mammillaris*, from whence it is carried backwards on the *Occiput*. *Insertion.*

Its Use is to bring the Head backwards laterally; but when both act, to pull the Head directly backwards. *Use.*

In a Dog it terminates in the transverse Process of the first *Vertebra colli*, and into the posterior and lateral Part of the occipital Bone. Backwards it is intimately conjoined with its Fellow of the other Side, from the sharp Process of the last *Vertebra colli* to the *Occiput*, from which Commissure or Joining there runs down a thin transparent Membrane to all the *Ligamentum colli*.

TRACHLEO-MASTOIDÆUS, seu CAPITIS PARS
TERTIUM, Fallop.

Origin.

Arises from the transverse Process of the first and second *Vertebræ dorsæ*, and from the three or four lowermost of the Neck by so many thin Tendons, which uniting form a pretty thick fleshy Belly, that runs up under the *Splenius*, and

Insertion.

Is inserted into the Middle of the back Side of the *Processus mastoideus* by a third Tendon.

Use.

Its Use is to assist the *Complexus*.

N. B. This Muscle often receives a roundish fleshy Slip from the *Longissimus dorsæ*.

In a Dog it is inseparably united with the Tendon of the *Splenius*, as its Termination in the Occiput.

COMPLEXUS

Insertion.

Arises tendinous and fleshy from the six or seven superior transverse Processes of the *Vertebræ* of the Back, and from all those of the Neck, except that of the first, by so many distinct Beginnings; in its Ascent it adheres to the spinal Process of the last *Vertebra colli*, and to the Ligament that runs from thence to the second *Vertebra*, where it leaves its Fellow of the o-

ther

her Side, and runs off obliquely forwards to its Termination.

Is inserted fleshy into the *Os occipitis*, *Insertion.* between the upper Part of the *Obliquus superior*, and the Edge of the Protuberance observable in the Middle of that Bone.

If one Muscle acts, the Head is thereby pulled a little to one Side; but if both act in Concert, the Head is extended, or drawn directly backwards.

In a Dog it arises from the four superior transverse Processes of the Back by so many thin and small Tendons, as also from the five lower Ones of the Neck by so many different Heads, not unlike the Digituli of the great serrated Muscle, which uniting form a large fleshy Belly, that terminates tendinous in the lateral Part of the Occiput, near its Ridge.

RECTUS MAJOR

Arises fleshy from one of the double *Origin.* Spines of the second Vertebra of the Neck, and grows broader in its Ascent, which is not streight, but obliquely outwards, being as it were divided into two thin Portions, the innermost of which

Is inserted into the *Occiput*, near the *Insertion.* *Rectus lateralis*; the other, which is the broadest, ends in the same Bone, under
Part

Part of the *Obliquus major*, tendinous and fleshy.

Use. Its Use is to extend or pull the Head backwards.

This in a Dog is double; the first, on the Rectus major, comes from the lower Part of the spinal Process; the second, which I call Rectus medius, proceeds from the upper Part of the same Spine.

RECTUS MINOR

Origin. Arises narrow from a little Protuberance in the Middle of the back Part of the first *Vertebra colli*, close by its Fellow, and

Insertion. Is inserted pretty broad (its inner Edge being only covered by the *Rectus major*) into the Sides of a Dimple in the *Os occipitis*, near its great Foramen.

Use. Its Use is to assist the *Rectus major* in nodding or bowing the Head a little backwards.

OBLIQUUS SUPERIOR

Origin. Arises from the transverse Process of the first *Vertebra* of the Neck.

Insertion. Is inserted tendinous and fleshy into the *Os petrosum* and *occipitale*, between the back Part of the *Processus mamillaris* and the *Musculus complexus*.

Use. It serves for the oblique or semicircular Motion of the Head.

This

This in a Dog is also double; one Muscle arises fleshy from the Extremity of the transverse Process of the first Vertebra colli, the other springs from all the upper Edge of the same Process, and both seem to unite about their Insertion into the Occiput.

OBLIQUUS INFERIOR

Arises fleshy from the spinal Process of the second Vertebra colli, and from some Part of the Body of the same next the Spine. Origin.

Is inserted into the transverse Process of the first. Insertion.

Its Use is to assist the former. Use.

In a Dog it arises from the Edge of the long Spine of the second Vertebra colli.

C H A P. XXVII.

Of the Muscles of the NECK, that ly on its back Part.

SPINALIS

A Rises by a great many tendinous and fleshy Fibres from the five superior transverse Processes of the Vertebrae of the Back, ascending obliquely under the Complexus. Origin.

Is

Insertion. Is inserted into the fifth, fourth, third and second spinal Processes of the Neck.

Use. Its Use is to extend the Neck, by drawing it directly backwards.

In a Dog it much better deserves this Name, because it accompanies all the Spines of the Neck, arising from the Top of the first spinal Process of the Back, and running straight to that of the second Spondyle of the Neck, being firmly fastened to the Sides of all the intervening acute Processes.

TRANSVERSALIS

Origin. Arises tendinous and fleshy, partly from the oblique Processes of the four inferior *Vertebræ* of the Neck, and partly from the Space between them and the transverse Ones, being only a Continuation of the same Series of muscular Fibres that compose the Muscles of the Back of the same Name.

Insertion. Is inserted near the Root of the superior *Spines* of the Neck; yet the uppermost Termination is not only into the *Spine* of the second *Vertebra*, but also into the Body of the same *Spondyle* laterally.

Use. Its Use is to move the Neck directly backwards if both act, and obliquely backwards if one only acts.

In a Dog the Insertion of this Muscle is into the Bodies of the Vertebrae of the Neck.

INTERSPINALES *Cowperi*

Arise fleshy from the superior Part of *Origin.*
each double spinal Process of the Neck,
except the uppermost, which comes from
the Body of the first *Vertebra*, and are

Inserted into the inferior Part of all the *Insertion.*
said *Spines*.

Their Use is to bring these acute Pro- *Use.*
cesses near each other.

INTERTRANSVERSALES * * *

The Distance between the transverse
processes of the *Vertebrae* of the Neck,
most of which are bifid or forked, is filled
up with a fleshy Substance, arising from *Origin.*
the inferior, and ascending to its *Insertion.*
Insertion at the superior Process.

Their Use is to approximate these trans- *Use.*
verse *Apophyses*.

INTERVERTEBRALES.

They arise from the Body of one *Verte-* *Origin.*
bra laterally, and are

Inserted, after an oblique Progress, into *Insertion.*
the back Part of the other *Vertebra* imme-
diately above it.

Their Use is to draw the Bodies of the *Use.*

L

Verte-

Vertebræ nearer one another, and a little to one Side.

N. B. The Number of these little small Muscles is very uncertain, because they vary in most Subjects; the last Pair, being the slenderest of all, are chiefly conspicuous upon the back Part of the first and second, and second and third *Vertebræ*.

In a Dog they are all larger than in Man.

C H A P. XXVIII.

Of the Muscles of the BACK.

THOUGH the Muscles that ly upon the *Vertebræ* of the Back and Loins do appear, even in the Opinion of the great *Fallopious*, to be only a confused Mass, or indigested Heap of tendinous and fleshy Fibres, extremely intricate, and so variously interwoven one with another, that it seems very difficult, if possible, to separate them; yet, in my anatomical Exercises, I always demonstrate them, having in all Subjects found them regular and uniform, fairly and distinctly divided into eighteen Muscles, nine on each Side; one of which belongs to the *Thorax*, viz. the *Sacro-lumbalis* already described, three to the

the Back, and five to the Loins. *Galen* and Mr. *Duverney* think it indifferent, either to reckon these Muscles, which they call *Spinales* and *Vertebrales*, as one Pair only, or to multiply their Number according to that of the *Vertebræ*; but in my Judgment the last would breed a great deal of Confusion, and the first shews but little of an Artist.

LONGISSIMUS.

The Origin of this Muscle is in common with that of the *Sacro-lumbalis*. Origin.

Is inserted into all the transverse Processes of the Back by a double Tendon into each; from its Outside there go off several *Fasciculi* of fleshy Fibres, interspersed with a few tendinous *Filaments*, which are soon inserted into the lower Edge of most of the Ribs, not far from their *Tubercle*. Insertion.

Its Use is to extend the *Vertebræ* of the Back, and so keep the Trunk of the Body erect. Use.

N. B. From the superior Part of this Muscle there runs up a round fleshy Portion, which, becoming tendinous, unites with a carnous Part of the *Par tertium Fallopii*, which I have called *Trachelomastoidæus*.

SEMI-

SEMISPINALIS

Origin. Arises from the transverse Processes of the six or seven lowermost *Vertebræ* of the Back by so many distinct Tendons which soon grow fleshy, and then, becoming tendinous again, are

Insertion. Inserted tendinous into all the superior spinal Processes of the Back, and into the lowermost Spine of the Neck.

Use. Its Use is to assist the following.

TRANSVERSALES DORSI INTERIORIS

Origin. Arise tendinous and fleshy from the upper Part of the transverse Processes of the Back; then, growing all fleshy, they run over the next *Vertebra*, and are

Insertion. Inserted near the Root of all its spinal *Apophyses*.

Use. If they all act on one Side, they extend the Back obliquely, or move it laterally; but, if they work together, they extend the *Vertebræ dorsales* by pulling them backwards.

C H A P. XXIX.

Of the Muscles of the LOINS.

THE *Vertebræ* of the Loins are moved by five Pair of Muscles.

SPINALIS *Cowperi*

Arises tendinous and fleshy from the *Origin.*
superior single *Spines* of the *Os sacrum*, in
common with the *Sacro-lumbalis* and *Longissimus dorsi*, and

Is inserted tendinous into all the spinal *Insertion.*
Processes of the *Vertebræ lumborum*.

Its Use is to extend the foresaid *Verte-* *Use.*
bræ.

TRANSVERSALIS LUMBORUM, *vulgo* SACER,

Arises fleshy from the oblique Proces- *Origin.*
ses of the *Vertebræ* of the Loins, and

Is inserted near the Root of their spi- *Insertion.*
nal Ones.

Its Use is to move the *Vertebræ lumbo-* *Use.*
rum, after the same Manner that the *Trans-*
versales do those of the Back.

QUADRATUS

Arises broad and tendineo-carnous from *Origin.*
the posterior Part of the *Spine* of the *Ilium*.

Is

Insertion.

Is inserted into the transverse Processes of all the *Vertebræ lumborum* except the last, into the first Rib, and by a small Tendon, that creeps up under the *Diaphragm*, into the last *Vertebra* of the Back laterally.

N. B. From the fourth, third, and sometimes the second transverse Process, there arises so many small Muscles, which united with this *Quadratus* on its Inside that respects the Cavity of the *Abdomen*.

Use.

Its Use is to move the Loins to one Side, and when both act together to bend the *Vertebræ* streight forwards.

In a Dog it arises from the Spine of the *Ilium* internally, and, ascending, adheres to all the transverse Processes of the Loins then, entering the Cavity of the Thorax, it ends tendinous and fleshy in its tenth or ninth *Vertebra*, counting from above downwards.

PSOAS PARVUS Riol.

Origin.

Arises fleshy from the upper *Vertebræ* of the Loins laterally.

Insertion.

Is inserted by a long flat thin Tendon into that Part of the *Os pubis* where it joins the *Ilium*.

Use.

Its Use is to assist the *Rectus abdominis* in drawing the *Os pubis* upwards, as in raising

ing

ing ourselves from a decumbent Posture, as Mr. Cowper writes. It may also serve to bend the Loins forewards; but then its Beginning must be drawn from the *Ossa pubis*, and its Termination be fixed in their *Vertebræ*.

This in a human Body is often missed, but never in a Dog, arising from the Bodies of the four lowermost *Vertebræ dorsi*, and as many of the upper *Spondyles of the Loins*, by so many small Tendons laterally, and fleshy from the Middle of all the same *Vertebræ laterally*. It soon turns into a broad and thin Tendon expanded over the great *Psoas*.

INTERTRANSVERSALES * * *.

These ly between the transverse Processes of the Loins, arising from all the Origin. Edge of one, and terminating into that of Insertion. the other.

Their Use is to bring the *Apophyses* nearer each other.

It was in a Dog that I first discovered these small Muscles, and I have never since missed them in the human Body.

CHAP.

C H A P. XXX.

Of the Muscles of the HUMERUS or ARM.

THE *Os humeri*, or Shoulder-Bone, moved by nine Muscles.

PECTORALIS

Origin. Arises fleshy from near Half the anterior Part of the *Clavicula*, and from the cartilaginous Endings of the fifth and sixth Ribs, where it always detaches a *Fasciculus* or two of fleshy Fibres, which run down upon the Membrane that covers the *Musculus abdominis externus*; besides, derives another Origin from almost all the Length of the *Sternum* by a great many short and small Tendons, which plainly decussate those on the other Side.

Insertion. Is inserted by two strong and broad Tendons, which cross one another at the upper and inner Part of the *Os humeri* between the *Deltoides* and *Biceps*.

Use. Its Use is to move the Arm upwards.

N. B. Its superior Tendon gives Rise to the *Involucrum*, or tendinous Ligament that binds in one of the Heads of the *Biceps*.

In a Dog the Fibres of this Muscles run in three different Directions, and may be easily divided into three Muscles. The largest arises by an acute fleshy Beginning from the Cartilago ensiformis, and from almost all the Sternum, and is inserted by a short and strong Tendon into a Protuberance in the Head of the Os humeri, and by a membranous Tendon into the same Bone lower down.

The second Muscle lies on the Outside of this, arising from near the Extremity of the Cartilago ensiformis, and, ascending, is partly inserted with the former, and partly runs down upon the Muscles lying on the Inside of the Humerus.

The third, which from its Position deserves the Name of Transversalis, arises from the upper Part of the Breast, and, crossing over the first, terminates below it, by a strong and broad Tendon, all along the fore Part of the Os humeri externally.

DELTOIDES

Arises fleshy from all the posterior and external Parts of the Clavicle that the Pectoralis does not possess, tendinous and fleshy from the lower Margin of the fore Part of the Spina scapulæ, and entirely tendinous from the posterior Part of the same.

M

Is

Insertion.

Is inserted tendinous and fleshy at :
rough Protuberance in the fore Part of
the Arm about its Middle, the Fibres of
its *Apex* or Point being intermixed with
some Part of the *Brachæus internus*.

Use.

Its Use is to pull the Arm directly upwards, and that either somewhat forwards or backwards, according to the different Direction of its Fibres.

In a Dog it arises tendineo-membranous from almost all the Spine of the Scapula; the Part of it which springs from the Acromion seems to be distinct from its other Origin but yet cannot be divided without Violence; its Action is all upwards and outwards, because it has no Beginning from the Clavicle, which is wanting, to direct it inwards.

SUPRASPINATUS

Origin.

Arises fleshy from all the *Basis scapulae* that is above its *Spine*, as also from its *Spine* and upper *Costa*.

Insertion.

Is inserted tendinous into that Part of the Protuberance on the Head of the *Oss. humeri* that is next the Canal of the *Biceps*.

Use.

Its Use is to lift or move the Arm upwards.

INFRASPINATUS

Origin.

Arises fleshy from all that Part of the *Basis scapulae* that is between its *Spine* and its

its lower Angle, from the Spine as far as its *Cervix*, and from the Edge of all that *Fossa* that runs above its inferior *Costa*.

Is inserted by a thick and short Tendon *Insertion.* into the upper Part of a rough and flattish Protuberance on the Head of the *Os humeri*.

Its Use is to pull the Arm directly back- *use.* wards.

N.B. 1. On the Inside of this Muscle one may observe two or three large Tendons run along its fleshy Substance.

2. This and the former are both covered with a tendinous Membrane, which not only strengthens their Actions, but also keeps them from swelling too much outwardly in acting.

In a Dog, through its Middle, lengthways, there runs a Tendon from which the fleshy Fibrillæ run off on each Side like the Stamina of a Feather.

TERES MINOR

Arises fleshy from all the round Edge *Origin.* of the inferior *Costa scapulæ*, being in all Subjects, that ever I dissected, distinguished from the *Infraspinatus* by a very considerable Membrane.

Is inserted tendinous a little below the *Insertion.* Termination of the last named Muscle, and

and fleshy a little lower upon the Neck of the *Os humeri*.

Use. Its Use is to assist the bigger round Muscle in bringing the Arm backward.

In a Dog it arises by a thin Tendon which closely adheres to the Infraspinatus from the Middle of the lower Edge of the Scapula and, turning into a round fleshy Belly, it passes obliquely over the Head of the Longus to its tendinous Insertion.

TERES MAJOR

Origin. Arises fleshy from the inferior Angle of the *Scapula*, and from all that Portion of its lower Rib, or *Costa*, that is rough and thicker than the rest, its fleshy Fibres being continued over Part of the *Infraspinatus*, to which they firmly adhere.

Insertion. Is inserted by a short, broad and thick Tendon, at a Roughness a little below the Head of the *Os humeri* internally; and tho' it is very closely joined to the Tendon of the *Latissimus dorsi*, yet they pass before their Insertions into that Bone.

Use. Its Use is to move the Arm backward and downwards.

LATISSIMUS DORSI

Origin. Arises by a thin Tendon from the posterior Part of the Spine of the *Ilium*, from the

the superior Spines of the *Os sacrum*, from all those of the *Vertebræ lumborum*, and from seven or eight of the lowermost Ones of the Back, below the *Rhomboides*; besides, it has another Origin from the bony Part of the eleventh, tenth, and ninth Ribs, near their *Curvature*, by so many distinct fleshy Slips. I never found it adhere to the inferior Angle of the *Scapula* by any carnous Fibres, it being only connected by Membranes to the *Teres major* and *Rhomboides*.

Is inserted by a strong and thin Tendon upon the Edge of the Channel of the *Biceps*, near the Termination of the pectoral Muscle. Insertion.

Its Use is to pull the Arm backwards and downwards. use.

In a Dog, when this Muscle arrives at the *Teres major*, it parts with a thin fleshy Production, which, running down upon the *Longus cubiti*, terminates tendinous into the Ancon. A little before its Insertion it receives the *Membrana carnosa*, which fleshy Panicle or Membrane is a thin carnous Expansion which covers the Muscles that ly on the upper Part of the *Os femoris*, the *Ilium* and *Sacrum*, the *Abdomen*, *Dorsum*, and most Part of the *Thorax*; as it comes
near

near the Axilla it narrows and grows thicker, and then joins in with this Muscle, where it terminates. By the Contraction of its Fibres the Skin is wrinkled, and the Hairs of the Back made to stand erect when this Animal is angry or afraid.

CORACO-BRACHIALIS

Origin. Arises partly tendinous and partly fleshy from the under Side of the *Processus coracoides scapulæ* near its Tip, adhering in its Descent, to one of the Heads of the *Biceps*.

Insertion. Is inserted tendineo-carnous about the Middle of the internal Part of the *Os humeri*, sending down a thin tendinous Expansion to the inner *Condyle* of that Bone.

Use. Its Use is to lift or move the Arm upwards. Through this Muscle passeth a large Branch from the fourth Pair of Nerves of the Neck, which constitutes the first brachial Pair.

In a Dog it is a small thin Muscle, arising from a Protuberance in the upper Part of the superior *Costa scapulæ* by a very slender Tendon, which, passing over the Head of the *Humerus*, grows fleshy, and is so inserted into the Inside of that Bone, about an Inch or more below its Neck.

SUBSCAPULARIS

Arises fleshy from all the Basis of the *Scapula*, from all its superior *Costa*, and about one Half of its inferior ; besides, it has two tendinous Beginnings arising from two little Protuberances seated in the hollow Part of this Bone near its Basis, at two or three Inches Distance from one another, which Tendons are continued thro' the fleshy Part of the Muscle to its Ending, being subdivided into many more as it passes over the Juncture.

Is inserted tendinous into the upper Edge of the Protuberance on the Head of the *Os humeri* laterally.

Its Use is to bring the Arm close to the Ribs.

The Tendon of this, with that of the *Infra* and *Supraspinatus*, adheres firmly to the Membrane that involves the Articulation of the *Humerus* with the *Scapula* ; but they may be all easily divided one from another, without cutting their tendinous Fibres.

In a Dog it only fills up three Parts of the Concave or hollow Part of the *Scapula*, the *Serratus anticus major* possessing the rest.

Be-

Besides the nine Pair of Muscles above described, a Dog has two more. The first name

Levator humeri proprius. It arises membranous and fleshy from all the Space between the tendinous Ending of the Mastoidæus and the Ridge of the Occiput, and from the upper Part of the Ligamentum colli; this large Beginning contracts and grows narrower as it runs obliquely down the Neck, closely adhering to some Part of the Levator scapulæ major, and, passing over the Articulation of the Humerus, goes straight down to its Insertion in the fore Part of the same Bone, near the Flexure of the Cubit, between the Biceps and Brachiaëus internus. The second I call

Musculus ad levatorem accessorius. It arises from the Os occipitis, near the Insertion of the thick Tendon of the Mastoidæus and, becoming a thick fleshy Muscle, runs down to its Insertion into the Levator proprius, being there of an equal Breadth with it. Just above the Head of the Os humeri near the Termination of this Muscle, there is placed a small falcated cartilaginous Bone tied to the Scapula and Top of the Sternum by two small Ligaments, which seems to be an imperfect Clavicle.

In Cats this Muscle is inserted into the whole Length of their Clavicula, which it serves to lift up. But in this Animal the Use of this accessory Muscle seems calculated for the Assistance of the Levator, which serves to raise the Os humeri upwards, and at the same Time to turn it a little outwards, whereby the fore Feet are kept from interfering or cutting one another in running or leaping.

C H A P. XXXI.

Of the Muscles of the CUBIT.

THE Cubit, or fore Arm, reaching from the Extremity of the Os humeri to the Wrist, and composed of two Bones, viz. the Ulna and Radius, has five Muscles.

BICEPS INTERNUS.

Its first and outermost Head arises tendinous from the *Cervix scapulæ*, near the upper and narrow Edge of its Cavity called *Acetabulum*, which in its Descent is enclosed in a Channel in the Head of the Os humeri, by a membranous Ligament that proceeds from the *pectoral* Muscle.

Origin.

N

The

The second or innermost arises tendinous and fleshy from the *Processus coracoideus scapulæ*. A little below the Middle of the fore Part of the Arm these Heads unite.

Inserition. Is inserted by a strong and thick Tendon into all the *Tubercle* on the upper End of the *Radius* internally.

Use. Its Use is to bend the *Cubit*.

N. B. About the *Flexure* of the *Cubitus* or Ben ding of the Elbow, where it begins to grow tendinous, it sends off an *Aponeurosis*, first taken Notice of by that celebrated Anatomist Mr. *Cowper*, vid. *Myotom. reformat.* Page 147. which covers all the Muscles on the Inside of the *Cubit*. Its Fibres decussate those of another tendinous Membrane that lyes under it.

In a Dog it consists but of one Head arising from the Cervix scapulæ, and on that Account I call it Flectens cubitum anterior because it lyes above the following Muscle.

BRACHIALIS INTERNUS

Origin. Arises fleshy from the Middle of the *Os humeri* at each Side of the Termination of the *Deltoides* Muscle, filling up all the Space between the two Edges of this Bone.

Inserition. Is inserted by a very strong Tendon into the upper and fore Part of the *Ulna*.

Its Use is to assist the former.

Use.

In a Dog it arises broad and fleshy from the back Part of the Humerus, just under its Neck; from thence it runs obliquely to the fore Part of that Bone, and then proceeds as in Man.

BICEPS EXTERNUS

The first Head, called *Longus*, arises Origin. broad and tendinous from the *Costa scapulae inferior*, and a little fleshy from its Neck. The second Head, called *Brevis*, arises by an acute tendinous and fleshy Beginning from the *Os humeri*, about an Inch below its Head. Upon the back Side of the *Humerus*, these two, with the following Muscle, join their Fibres, and are

Inserted into the upper and external Insertion. Process of the *Ulna*, called *Ancon*.

Its Use is to extend the *Cubit*.

Use.

BRACHIALIS EXTERNUS

Arises by an acute fleshy Beginning Origin. from the *Os humeri*, a little higher than the Insertion of the *Teres major*. About the Middle of the Arm it passes under the *Longus*, with which it mixes Fibres to the external Ridge of that Bone, being continued down the same to the *Condyle* of that

that Side, where some of its Fibres join inseparably with the *Anconæus*; the rest ending in the *Ancon*, with those of the *Longus* and *Brevis*.

N. B. The *Brachæus externus*, and the *Biceps externus*, or *Gemellus*, make but one single Muscle with three Heads, which I give the Name of *Triceps cubiti*, or *Extensor cubiti magnus triplici principibus natus*.

ANCONÆUS, vel CUBITALIS, Riol.

Origin. Arises by a round and short Tendon from the back Part of the external Condyle of the *Os humeri*; this soon grows fleshy and is so intangled with Part of the *Brachæus externus*, that there can be no separating them without Violence.

Insertion. Is inserted fleshy and thin into the lateral Part of the *Ulna*, a few Inches below the *Olecranon*.

Use. Its Use is to assist in extending the *Cubitus*.

In a Dog the Extention of the Cubit, *Ulna*, is performed by the joint Action five very distinct Muscles.

Extensor primus, or *longus*, arises as in Man, and becomes a very thick and fleshy Belly, but, gradually contracting, grows tendinous, and is so inserted into the upper an-

external Part of that Process of the Ulna, called Ancon in human Bodies.

Extensor secundus, or brevis, arises from the superior and back Part of the Humerus, just under its smooth Head, and, descending under the Longus, turns into a small Tendon, which, passing through a Sulcus in the Extremity in the Ulna, ends a little below the Longus.

Extensor tertius, which is something analogous to that Head of the Triceps cubiti called Brachiaëus externus, is a pretty thick fleshy Muscle, arising from the upper and posterior Part of the Humerus, at a Protuberance near the Ending of the Teres minor ; it ends in the Outside of the Ancon.

Extensor quartus, vel Anconæus, fills up a Cavity or Hollow between the Heads of the Ulna and Radius, arising and terminating as in Man.

Extensor quintus arises by a thin Tendon from the Inside of that Protuberance into which the Supraspinatus of the Scapula is inserted, and, passing under the Tendon of the Teres major, becomes fleshy, and ends tendinous on the Inside of the Ancon.

C H A P. XXXII.

Of the Muscles of the PALM of the HAND.

THE Muscles of the *Palma*, or *Vos manus*, are two.

PALMARIS LONGUS

Origin. Arises tendinous from the internal *Procoracoid* tuberance of the *Os humeri*; it soon becomes fleshy, and within a few Inches becomes tendinous again. About the *Ligamentum carpi annulare* it expands itself into a broad disgregated Tendon (giving some *Filaments* to the *Adductor pollicis*) between which and the Skin there lyes a great deal of Fat. Near the lower End of the *metacarpal* Bones it is decussated by a great many tendinous streight Fibres, which run upon it from one Side to the other.

Insertion. Its Insertion is, by two small Tendons into the Sides of the Cartilage that lyes upon the Articulation of each Finger with the *Ossa metacarpi*.

Use. Its Use is to contract the Palm of the Hand, and so assist it to grasp any Thing closely.

N. B. This Muscle does sometimes spring from the *Ligamentum annulare*.

It is wanting in a Dog.

PALMARIS BREVIS *Joan. Bapt. Canan.* vel
CARO QUADRATA,

Arises, by a Membrane-like Tendon, *Origin.*
 from the superior and external Part of the
Os metacarpi minimi digiti; whence ascending
 obliquely, and adhering to the fourth
 Bone of the *Carpus* that lyes upon the third,
 it grows fleshy in two or three Places,
 being separated by interveening Mem-
 branes; and, passing under the *Palmaris*
longus,

Is inserted tendinous into the *Liga-* *Insertion.*
mentum annulare, and into that Bone of the
Carpus that articulates with the Thumb.
 The upper Part of this Tendon adheres
 to the *Abductor pollicis*, and its lower Part
 to the *Flexor secundi internodii ejusdem*.

Its Use is to make the Palm of the Hand *use.*
 hollow, by drawing the Ball of the Thumb
 towards the *Os metacarpi* that sustains the
 little Finger, and so forms what they call
Diogenes's Cup.

This is wanting in a Dog.

C H A P.

C H A P. XXXIII.

Of the Muscles of the WRIST.

THE *Carpus*, or Wrist, composed of eight small Bones, situated between the Extremities of the *Ulna* and *Radius*, and the upper Part of the *metacarpal* Bones, is furnished with four Muscles ; and yett all of them, as *Veslingius* remarks, terminate in the Bones of the *Metacarpus*.

FLEXOR CARPI RADIALIS

Origin.

Arises tendinous and fleshy from the internal Protuberance of the *Os humeri*, and from the rough Edge of all the anterior Process of the *Ulna*, where it firmly adheres to the *Pronator radii teres*.

Insertion.

Is inserted by a flat Tendon into the fore and upper Part of the *Os metacarpii* that joins with the fore Finger, having run through a *Sinus* or Cavity of the Bone of the Wrist that articulates with the Thumb, being there bound in by a Membrane which parts it from the Tendons of the other Muscles, which with it pass under the *Ligamentum annulare*.

Use.

Its Use is to bend the Wrist, together with the Hand ; and, when its acts im-

Con-

Conjunction with the *Radialis extensor*, the Wrist is moved laterally towards the *Radius*.

FLEXOR CARPI ULNARIS

Arises tendinous from the same Tu-^{Origin.}bercle of the Shoulder-Bone. In its Descent, according to the Length of the *Ulna*, it is covered by a tendinous Expansion in common with the other Muscles that ly on the Outside of the *Cubit*, and by this only it seems to adhere to the external Edge of that Bone.

Is inserted by a short and strong Ten-^{Insertion.}don into the fourth Bone of the first Rank of the *Carpus*, placed upon the third; at some Distance from its Termination there goes a Ligament from this little Bone to the *Os metacarpi minimi digiti*, which some reckon to be a Continuation only of the Tendon of this Muscle.

Its Use is to assist the former in bending ^{use.} the *Carpus*.

In a Dog it makes two distinct Muscles; the largest arises tendinous from the inner Tubercle of the Humerus, near the Edge of the Sinus that receives the *Ulna*; is inserted into the Bone of the *Carpus* that stands out of Rank. The lesser has a thin fleshy Origin continued from the Ancon about

an Inch down the Inside of the Ulna, and terminates into the same Bone with the bigger, at some Distance from it.

EXTENSOR CARPI RADIALIS

Makes two very distinct Muscles ; the first, which I call *Longus*, or *Superior*, arises broad, thin, and fleshy, from the lower Part of the external Ridge of the *Os humeri*, between the *Supinator radii longus* and the *Condyle*. The other, which I name *Brevis*, or *Inferior*, springs tendineo-carnous from the same Protuberance of the *Os humeri*. They both ly on the Outside of the *Radius*, the last continuing fleshy lower down than the first. The *Longus*

Insertion. Is inserted into the upper Part of the Bone of the *Metacarpus* that sustains the fore Finger ; the *Brevis* into that which stays the middle Finger, both being tendinous.

Use. Its Use is to extend the Wrist, and bring the Hand backwards.

In a Dog it may properly enough be called Bicornis, because it cannot, without great Violence, be parted at its Origin.

EXT

EXTENSOR CARPI ULNARIS

Arises tendinous from the external Pro-
tuberance of the *Os humeri*, between the *Origin.*
Anconæus and *Extensor digitorum communis*,
and fleshy from the upper Part of the *Cubit*
laterally, descending according to the
Length of this Bone, its round Tendon
being inclosed in a Channel dug in its
Extremity, from which, to its Termination,
it passes through a Ligament like a Sheath.

Is inserted tendinous into the superior *Insertion.*
Part of the *metacarpal* Bone that supports
the little Finger.

Its Use is to assist the Muscle last de- *Use.*
scribed.

N. B. It is covered with a tendinous
Expansion, continued down from some of
the Tendons of the *Extensors* of the *Cubit*,
which *Aponeurosis* is finely expanded over
all the Muscles that ly on the Outside of
the fore Arm, as that of the *Biceps* is on
those of its Inside.

When this and the *Flexor ulnaris* act at
once, the Wrist, with the Hand, is mov-
ed sideways towards the *Ulna*.

In a Dog it bestows a Tendon on the Bone
of the Carpus that stands upon another, on
which Account this pulls the Carpus a little
out-

outwards in Extension, which is of a very great Advantage to this Animal in running

C H A P. XXXIV.

Of the Muscles of the FOUR FINGERS.

THE Muscles of the four Fingers divide into common and proper. The *common* are such as belong to all the four Fingers, being thirteen in Number viz. one *Extensor*, two *Flexors*, four *Lumbricales*, and six *Interossei*.

PERFORATUS

Origin. Arises tendineo-carnous from the inner Protuberance of the *Os humeri*, tendinous from the *anterior* Process of the *Ulna*, near the Edge of its lunated Cavity, and tendineo-membranous from about the Middle of the fore Part of the *Radius*; being continued from near the Beginning of the *Flexor pollicis magnus*, three or four Inches down that Bone, its fleshy Belly divide into four Tendons before it passes under the Ligament of the Wrist, and these are

Insertion. Inserted into the superior Part of the second Bone of each Finger, that which goes to the little one being by far the smallest

Im

In the Palm of the Hand they are united to one another, and to those of the Muscle next in order, by soft slimy Membranes ; about the Middle of the first Joint they are divided for the free Passage of the Tendons of the *Perforans*, and, where they unite again, one may observe a very fair Decussation of some of the tendinous Filaments of one Side running across to the other ; then subdividing, as Mr. *Cowper* has well remarked, they march for some Space upon the Edges of the Bones before they are lost upon their upper Part, as I have in all Subjects observed.

Its Use is to bend the second Joint of the Fingers. *Use.*

In a Dog the Tendons of this Muscle are not slit for the passing of those of the Perforans, but they form a round Case as long as the first Joint, which covers those on all Sides in their Passage, having only a little Hole of an oval Figure on its Outside. They end without any Subdivision.

PERFORANS

Arises fleshy from all the upper Part of the *Ulna* laterally, being continued down its external Ridge or *Spine* to its Middle, from the inner Edge and fore Part of that Bone, and from one Half of the *Ligament* that *Origin.*

that joins it to the *Radius* ; the thick, superior, fleshy Part of this Muscle is firmly kept in by the *Fascia tendinosa* that covers the Muscles lying on the Outside of the fore Arm, as has been already remarked. Splitting into four Tendons, a little before it passes the transverse Ligament of the *Carpus*, they run through the Fissures or Slits made in the former Tendons, being continued farther on to their Insertion into the third Bone of all the four Fingers.

Use. Its Use is to bend the last Joint of the Fingers.

In a Dog it arises by three distinct fleshy Originations ; the outermost proceeds from the upper and middle Part of the Radius, the innermost arises from the upper Part of the Ulna, being farther continued down most of its Edge : Both these Heads are very small but the middlemost makes a very large big bellied Muscle, seemingly divided into two or three, which springs from the internal Protuberance of the Os humeri. These three unite and form a thick and broad Tendon which soon splits into five small Ones ; four terminating as in Man, and the fifth ending in the Thumb.

LUMBRICALES

These four Muscles arise thin and fleshy *Origin.*
 from the Outside of the Tendons of the
Flexor profundus, a little below the *Liga-*
mentum transversale, to which, in their
 Descent, they adhere for some Space, but
 parting from thence they grow round and
 pretty large. They terminate by long and *Insertion.*
 slender Tendons, which run over the
 transverse cartilaginous Ligament placed
 upon the Articulation of the first Bone of
 the Fingers, with those of the *Metacarpus*,
 into the broad Tendons of the *Interossei*,
 about the Middle of the first *Internode* next
 the Thumb laterally.

They are said to assist in bending the *use.*
 first Joint of the Fingers.

EXTENSOR DIGITORUM COMMUNIS

Arises by an acute Tendon from the *Origin.*
 outward Extuberance of the *Os humeri*,
 between the *Extensors* of the *Carpus*, close-
 ly adhering to the *Supinator radii brevis*.
 Before it passes under the *Ligamentum carpi*,
 it splits into four flat Tendons, each of
 which may be divided into a great many
 smaller. It is chiefly about the Extremity
 of the *metacarpal* Bones that they remit
 ten-

tendinous Filaments to each other. The Tendons are

Infertion. Inserted into the upper Part of the second Bone of each of the four Fingers, being tacked to the first Joint in the Way thither.

use. Its Use is to extend the first and second Joints of the Fingers.

In a Dog it runs to the last Bone of each Toe, between the two Ligaments that go from the second Internode to the third. The Use of these Ligaments is to draw the last Joint backwards and upwards, and keep it suspended, that the extending Tendon may not always be upon the Stretch, as shall be more fully explained in another Place.

INTEROSSEI

Are well divided into *external* and *internal*. The *external* fill up all the Space that the Bones of the *Metacarpus* leave towards the Back of the Hand. The *internal*, which, properly speaking, deserve not the Appellation of *Interossei*, arise from the fore Part of the *metacarpal* Bones that respect the Palm of the Hand, being only conspicuous in the *Vola*, and not in the *Dorsum manus*, whereas the *externi* are apparent in both.

The

The first *interosseous* Muscle arises tendinous and fleshy from all the fore Part of the *Os metacarpi indicis*, between its Head and Condyle; as also from the upper Part of the *Os metacarpi medii digiti*. This, which is the first of the *internal*, belongs to the Side of the fore Finger, next the middle one.

The second, which is the first of the *external*, arises from most of the Outside of the *Os metacarpi medii digiti*, and a little tendinous from its fore Part just under its Head, being conspicuous both towards the Back and Palm of the Hand. This runs along the Side of the middle Finger next the *Index*.

The third, which is the second of the *external*, and runs along the other Side of the middle Finger, fills up all the Space between its *metacarpal* Bone and that which supports the Ring-Finger, from both which it springs, as also from some of the fore Part of this Bone laterally, being likewise very conspicuous in the Palm of the Hand.

The fourth, which is the second of the *internal*, belongs to the Side of the Ring-Finger next the middle one, arising from all the fore Part of its *metacarpal* Bone below its Head.

Origin.

The fifth, which is the third of the *external*, runs *along* the other Side of this Finger, and fills up all the Space between the *metacarpal* Bone of this and that of the little Finger, on the Back of the Hand, arising from both those Bones.

Origin.

The sixth, or third of the *internal*, runs along the Side of the little Finger, next to the Ring-Finger, and arises tendinous and fleshy from the anterior Edge of all its *metacarpal* Bone.

All these Muscles of both Kinds pass under the transverse *cartilaginous Ligament* already described, and then each of their fleshy Bellies forms two Tendons; one is soon

Insertion.

Inserted into the upper Part of the first *Internode* laterally; the other is dilated very broad, so as to cover most of the first Joint adhering to the Tendon of the *Extensor*; then, narrowing a little as it approaches the upper Part of the second *Internode*, where the last named *Muscle* ends, it runs obliquely along that Bone to its Termination at the superior Part of the last Joint of the Finger, having first joined with its Fellow of the other Side.

Use.

When the long Tendons act, they extend the last *Internode*, and so supply what was wanting in the *Extensor magnus*; and

where

when the short Ones are in Action, the Fingers are moved laterally, *i. e.* they are either brought nearer, or drawn farther from the Thumb.

In a Dog, something analogous to these, I observe six Muscles; four of which are large, placed not between, but in the Hollow of the metacarpal Bones, and run streight down: The other two are very small, and run oblique. The large arise tendinous and fleshy from the superior Part of the metacarpal Bones, adhering to the same in their Descent: At the Os sesamoidæum of the first Joint, each divides into two Tendons, and, running obliquely along the Sides of the Finger or Paw, they unite inseparably with the Tendon of the Extensor, near the lower Part of the first Bone of each fore Toe.

The first of the two little Ones belongs to the fore Toe, or Index; it arises from the upper Part of the Os metacarpi medii digiti, and, descending obliquely, grows tendinous about the first Joint, and terminates near the Middle of this Bone laterally internally.

The second arises from the Os metacarpi of the third fore Toe or Finger, and, after an oblique Progress, ends in the Inside of the first Bone of the little fore Toe. Their Use is to bring those two Toes nearer the middle Ones.

The

The *proper* Muscles of the Fingers are such as belong either to the fore or little Finger.

C H A P. XXXV.

Of the Muscles of the FORE FINGER.

THE fore Finger, or *Index*, has three Muscles.

EXTENSOR SECUNDI INTERNODII INDICIS
PROPRIUS, *vulgo* INDICATOR,

Origin.

Arises by an acute fleshy Beginning from the Middle of the *Ulna*, immediately below the *Extensores pollicis*; turning tendinous, it passes under the same *annular Ligament* with the *Extensor communis*.

Insertion.

Is inserted at the upper Part of the second Joint, on the Inside of the *Extensor magnus*.

Use.

Its Use is to extend the fore Finger a little obliquely.

In a Dog it is inserted into the last Joint.

EXTENSOR TERTII INTERNODII INDICIS

Origin.

Arises fleshy from all the Outside of the *Os metacarpi* that sustains the *Index*.

Is inserted by two Tendons like the *Interossei*, i. e. by a short one into the upper Part of its first Bone laterally, and by a broad and long one into the upper Part of its last Bone, being united with the *Musculus interosseus primus*. *Insertion.*

The short Tendon draws the *Index* *use*. from the rest, and so may retain the Appellation of *Abductor*; the long Tendon assists this *Interosseus* in extending the third or last Joint of the fore Finger.

This Muscle is wanting in a Dog.

ABDUCTOR

Arises broad and fleshy from the superior Part and Outside of the first Bone of the Thumb. *Origin.*

Is inserted by a short Tendon into the upper Part of the first Bone of the fore Finger, laterally, next the Thumb. *Insertion.*

Its Use is to bring the *Index* towards the Thumb, by drawing it from the middle Finger; whence, in respect of *this*, it may be stiled *Adductor*, and, in respect of *that*, *Abductor*.

This is wanting in a Dog.

C H A P. XXXVI.

Of the Muscles of the LITTLE FINGER.

THE *Digitus auricularis* has three proper Muscles, and one common to it with the *Extensor communis*, reckoned by some a proper Muscle, and named

EXTENSOR MINIMI DIGITI.

It is said to arise from the external Process of the *Humerus*, and from the upper Part of the *Ulna*; but, in my Opinion, it ought not to be reckoned a Muscle distinct from the *Extensor communis*, because it cannot be separated from it without cutting. Truth it is, it passes its Tendon under a *Ligamentum annulare* distinct from the other three Tendons, but that is far from being sufficient to constitute a particular Muscle.

All that prominent soft fleshy Mass that lies on the *Os metacarpi minimi digiti*, in the Palm of the Hand, is called in Greek *Hypothenar*, in as much as it is placed below that Part called *Thenar*. This I find always easily divisible into three Muscles viz.

EXTEN

EXTENSOR TERTII INTERNODII MINIMI
DIGITI

Arises fleshy, mixed with some tendi- *Origin.*
nous Fibres, from the Bone of the *Carpus*
that stands upon the third of the first
Rank, as also from the Ligament that ties
that Bone to the *Os metacarpi* of the lit-
tle Finger.

Is inserted after the Manner of the *In-* *Insertion.*
terosseï, i. e. by a short Tendon into the
upper Part of the first Bone of this Finger
laterally, and by a long Tendon into the
upper Part of the last Bone, having join-
ed the *Interosseus* of the other Side.

Its Use is to help to extend this last *Use.*
Joint, and to draw the Finger from the
rest, when the short one only acts.

ABDUCTOR MINIMI DIGITI, HYPOTHE-
NAR *Riol.*

Arises fleshy from the thin protuberat- *Origin.*
ing Part of the eighth Bone of the Wrist.

Is inserted by a pretty long and round *Insertion.*
Tendon, on the Inside of the short Ten-
don of the above described Muscle, near
the upper Part of the first Bone of this
Finger.

It

120 *The Muscles of the* LITTLE FINGER.

Use. It serves not only to abduce the little Finger from the rest, but also to bend a little.

FLEXOR PRIMI INTERNODII MINIMI
DIGITI

Origin. Arises tendinous and fleshy from the inferior Part of the thin Edge of the eighth Bone of the Wrist, and from all the inner Side of the *Os metacarpi* that sustains this Finger: At the *Condyle*, or round Part of this Bone, it divides into two Tendons which are inserted on each Side of the upper Part of the first Bone of the Finger.

Use. Its Use is to assist in bending the first *Internode* of the little Finger.

These three are wanting in a Dog.

C H A P. XXXVII.

Of the Muscles of the THUMB.

THE Thumb, or *Pollex manus*, which is equal in Strength to all the rest of the Fingers, opposite to which it is placed like another Hand, is moved by nine Muscles.

FLEXOR

FLEXOR TERTII INTERNODII

Arises by an acute fleshy Beginning Origin.
from the upper Part of the *Radius*, a little
below the Termination of the *Biceps*,
which Origin is continued down for some
Space on the fore Part of this Bone, in a
double Order of short fleshy Fibres end-
ing in the Tendon that runs in their Mid-
dle.

Is inserted into the third or last Bone Insertion.
of the Thumb, having passed its Tendon
under several annular Ligaments that come
from one Side of its second Bone to the o-
ther Side.

Its Use is to bend this last Joint. Use.

FLEXOR SECUNDI INTERNODII.

This may be divided into two distinct Origin.
Muscles, between which the Tendon of
the former Muscle runs. The *outermost*
arises from the Bone of the *Carpus* with
which the Thumb is joined. The *inner-
most* arises from Part of the same Bone, and
also from the upper Part of the *Os meta-
carpi indicis* and *Medii digiti*, in common
with the *Adductor*. They are both

Inserted into the two *Ossa sesamoidæa* of Insertion.
the second Joint of the Thumb.

Q

Their

Use. Their Use is to bend this Joint or *Inter node.*

FLEXOR PRIMI INTERNODII

Origin. Arises fleshy from the *Ligamentum transversale*, and the Bone of the *Carpus* that articulates with the Thumb, lying under the *Abductor*.

Insertion. Is inserted into all the Inside of the first Bone of the Thumb.

Use. Its Use is to bend this Joint.

EXTENSOR PRIMI INTERNODII

Origin. Arises fleshy from the upper and external Part of the *Ulna*, immediately below the Termination of the *Anconeus*, from the back Part of the *Radius*, below its *Sinipinator brevis*, and from the membranous *Ligament* that ties these two Bones together.

Insertion. Is inserted always by two, and very often by three distinct Tendons; the first is a large and round Tendon, which seems to be a Bundle of a great many small Ones terminating into the upper Part of the first Bone of the Thumb; the second Tendon is lost in the fleshy Beginning of the *Abductor pollicis*; and the third, which in some Subjects is wanting, is implanted into the Bone

Bone of the *Carpus* that articulates with the Thumb.

Its Use is to extend the first Bone of *Use.*
the *Pollex*.

EXTENSOR SECUNDI INTERNODII

Arises fleshy from the back Part of the *Origin.*
Radius, about the Middle of the fleshy
Belly of the former, into which, in its De-
scend, it firmly adheres; it has a second O-
rigin from some Part of the *membranous*
Ligament.

Is inserted into the upper Part of the *Insertion.*
second Bone of the Thumb.

Its Use is to extend the second *Internode*.

EXTENSOR TERTII INTERNODII

Arises by an acute tendinous and fleshy *Origin.*
Beginning from the *Ulna*, a little below
the Origin of the first *Extensor*, as like-
ways from the Ligament that connects
the two Bones. Its Tendon runs in a
proper Channel at the Extremity of the
Radius.

Is inserted into the third and last Bones *Insertion.*
of the *Pollex*.

Its Use is to extend the last Joint in *Use.*
bringing it backwards.

ABDUC-

ABDUCTOR, THENAR *Riol.*

Origin. Arises by a broad, tendinous and fleshy Beginning from the *transverse Ligament* of the *Carpus*, and from one of its Bones that articulates with the Thumb.

Insertion. Is inserted tendinous into the second Joint of the *Pollex digitorum manus*.

Use. Its Use is to draw the Thumb from the Fingers.

ABDUCTOR AD INDICEM, ANTITHENAR *Riol.*

Origin. Arises from the Outside of the upper Part of the *Os metacarpi indicis*.

Insertion. Is inserted into the first Joint of the Thumb, sending off a thin Tendon which runs along with the *Extensor pollicis longus*.

Use. Its Use is to draw the Thumb nearer the fore Finger.

ADDUCTOR AD MINIMUM DIGITUM

Origin. Arises a little tendinous, but chiefly fleshy, from the whole Length of the *metacarpal* Bone that sustains the middle Finger from thence its Fibres, contracting equally on both Sides, do run up to the Thumb.

Insertion. Is inserted into its second Joint a little below one of its Seed-like Bones.

Its Use is to bring the Thumb towards *us*. the Ring and little Fingers.

The Thumb of a Dog, or that Range of Bones set off at some Distance from the other Fingers or Claws, is only provided with one Extensor and one Flexor.

Extensor. *The Origin, Progress and Termination of this Muscle is very little different from the Extensor tertii internodii pollicis in Man, being a thin flat Muscle, partly tendinous and partly fleshy, which fills up the Cavity or Hollowness between the Ulna and Radius.*

Flexor is an exceeding small Muscle, which ariseth fleshy from one of the Bones of the Carpus, and ends so into the second Internode of what is analogous to a Thumb in this Animal.

C H A P. XXXVIII.

Of the Muscles of the RADIUS.

THE Radius, or second Bone of the Cubit, is bended and extended by the Muscles of that Part, already described, in common with the Ulna; but, besides, it has four Muscles subservient to its own Motions of *Pronation* and *Supination*.

PRO-

PRONATOR TERES

Origin. Arises fleshy from the *Os humeri*, a little above its internal Protuberance, tendinous and fleshy from that Process, and entirely tendinous from the anterior *Apophyses* of the *Ulna*.

Insertion. Is inserted thin and tendineo-carnous into the Middle of the external Part of the *Radius*.

Use. Its Use is to turn the *Radius*, together with the *Carpus* and whole Hand, inwards, and the Palm downwards; which Motion is called *Pronation*.

PRONATOR QUADRATUS

Origin. Arises broad, membranous and fleshy from the lower and inner Part of the *Ulna*, and, passing transversely,

Insertion. Is inserted, of the same Breadth, into the external and lower Part of the *Radius*.

Use. Its Use is to assist the former in the prone Position of the Hand.

In a Dog it lyes upon the Membrane that joins the two Bones of the Cubit together, to both which it adheres, and near the lower End of the Ulna it sends off a Tendon obliquely to the Extremity of the Radius, where it terminates.

SUPINATOR LONGUS

Arises acute and fleshy from the external Ridge of the *Os humeri*, two or three Fingers Breadth above the Beginning of the *Bicornis*. Origin.

Is inserted into the external and inferior Part of the *Radius*, near the *Carpus*. Insertion.

Its Use is to turn the *Radius*, &c. outwards, and the Palm of the Hand upwards, which Motion is called *Supination*. Use.

This is wanting in a Dog.

SUPINATOR BREVIS

Arises tendinous from the external Protuberance of the *Os humeri*, and tendineo-carnous from the external and upper Part of the *Ulna*, adhering strictly to the Membrane that involves the Articulation of these two Bones. Origin.

Is inserted into the Inside of the *Radius*, above, but chiefly below, the Insertion of the *Biceps*. Insertion.

Its Use is to assist the former in pulling the *Radius* backwards in the *supine Position* of the Hand. Use.

C H A P. XXXIX.

Of the Muscles of the THIGH.

THE *Os femoris*, or Thigh Bone, has sixteen Muscles.

PSOAS MAGNUS

Origin. Arises fleshy from the Body of the lowermost *Vertebra thoracis* laterally, from the Sides of all the *Vertebræ* of the Loins by so many carnous distinct Slips, and a little tendinous from all the transverse Processes.

Insertion. Is inserted tendinous into the lesser *Trochanter* of the *Os femoris*, and fleshy into the Bone a little below that Process.

Use. Its Use is to bend the Thigh, by bringing it forwards.

ILIACUS INTERNUS

Origin. Arises fleshy from all the internal Cavity of the *Os ilium*, and the Inside of its anterior Spine; it joins in with the former where it begins to become tendinous, in

Insertion. common with which it is inserted.

Use. Its Use is to bend the Thigh, and bring it directly forwards in Progression.

PEC

Prælectio sexta.

PECTINALIS

Arises broad and fleshy from the Spine, *Origin.*
 or superior and inner Part of the *Os pubis*.

Is inserted into the *Os femoris*, a little *Insertion.*
 below the lesser *Trochanter*, by a flat and
 short Tendon.

Its Use is to bend the Thigh-Bone by *use.*
 drawing it upwards.

*In a Dog it arises by a round and fleshy
 Beginning from the Os pubis, and soon turns
 into a broad and thin Tendon, which terminates
 at the inner Condyle of the Femur.*

GLUTÆUS MAXIMUS

Arises fleshy from the upper Part of the *Origin.*
Os coccygis, membranous and fleshy from
 all the double Spines of the *Os sacrum*
 and one or two of its lowermost single
 Ones, from all the external Edge of that
 Bone below the posterior Spine of the
Os ilium, from two Ligaments that run
 from the *Ischion* to the *Os sacrum*, *i. e.* one
 from its *sharp Process*, the other from its
Tubercle, (over which Part of this Muscle
 hangs in a large Fold) and entirely fleshy
 from more than one Half of the circular
 Edge of the *Ilium*, from the rest of which
 forewards it springs by a thin and broad
 Tendon, through which one may discover

R

Part

Part of the subjacent Muscle inseparably joined to that of the *Membranosus*.

Insertion. Is inserted by a large and thick Tendon into the *Femur*, at a very considerable Roughness at one Side of the upper Part of the *Linea femoris aspera*, a little below the great *Trochanter*.

Use. Its Use is to extend the Thigh, by pulling it directly backwards.

GLUTÆUS MEDIUS

Origin. Arises fleshy from all the outer Lip of the Edge of the Spine of the *Ilium*, except its posterior Part, where it springs from the *Costa* of that Bone.

Insertion. Is inserted into the Breadth of the great *Trochanter* by a broad Tendon.

Use. Its Use is to assist the former.

GLUTÆUS MINIMUS

Origin. Arises fleshy from the lower Part of the outer or back Side of the *Os ilium*, forewards from the Edge of its *anterior Spine*, and backwards from the Edge of its great *Sinus*.

Insertion. Is inserted by a large Tendon along the fore and upper Part of the great *Trochanter*, and by a small one into the Neck of the *Os femoris*.

Its

Its Use is to assist the two former in *use*.
extending the Thigh.

In a Dog I call the first Glutæus exter-
nus ; it arises membranous from almost all
the external Part of the Spine of the Ilium,
which joining with another fleshy Beginning
from the Sacrum, and from the Ligament
that is extended between that Bone and the
ischium, it becomes altogether carnous about
the Middle of the Muscle that lies under it,
and terminates tendinous a little below the
great Trochanter externally.

The second, or Medius, is by far the
largest, and arises fleshy from all the Spine of
the Ilium, filling up the hollow Part of that
Bone, being inserted tendinous into the upper
and external Part of the great Trochanter.

The third, or internus, arises fleshy from
the Middle of the Os ilium externally, ad-
dering in its Descent to both its Sides ; the
superior and inner Part of the great Tro-
chanter being the Place of its partly tendi-
ous and partly fleshy Insertion.

PYRIFORMIS, seu ILIACUS EXTERNUS,

Arises thick, broad and fleshy from *Origin.*
the inferior Part of the Os sacrum next
the Ilium, from which Bone also it de-
rives some Part of its Origin ; growing
gra-

gradually narrower it becomes tendinous and

Insertion. Is inserted into the upper Part of the Dent, or Cavity, at the Root of the great *Trochanter*.

Use. Its Use is to move the *Os femoris* upwards, and turn it somewhat outwards.

MARSUPIALIS, seu OBTURATOR INTERNUS,

Origin. Arises fleshy from the *Os ilium*, *Ischium* and *Pubis*, round the internal Circumference of the great Hole common to the two last named Bones. Its Inside is tendinous, being divided into several small Ones, which unite before its Termination.

Insertion. Is inserted tendinous into the Dent, or Cavity, at the Root of the great *Trochanter*.

Use. Its Use is to assist the former in the moving the *Os femoris* obliquely and semicircularly outwards.

GEMINI

Origin. Are two very distinct Muscles, united by a carnous Membrane both above and below, forming as it were a *Marsupium* or Purse, for the Reception of the Tendon of the last described Muscle. The superior arises from the acute Process of the *Ischium*, and the inferior from the outer Part

Part of the Knob or blunt Protuberance of that Bone, as also from the Ligament that runs from thence to the *Os sacrum*. They are both

Inserted fleshy into the Cavity of the *Insercion.*
great *Trochanter*.

Between these two small Muscles the *use.*
Tendon of the *Marsupialis* runs to its Insertion, and they serve not only to turn the *Os femoris* outwards, but to preserve that Tendon from being hurt by the Hardness of the Sinuosity of the *Ischium* which it passes through, as also to hinder it from slipping out of that Cavity while the Muscle is in Action.

QUADRATUS FEMORIS

Arises broad, tendinous and fleshy from *Origin.*
the Outside of the Protuberance of the *Os ischium*, and, passing transversely,

Is inserted into the Outside of the great *Insercion.*
Trochanter, reaching as low down as the little one.

Its Use is to bring the Thigh-Bone out- *use.*
wards.

In a Dog it arises from the Tubercle of the *Ischium*, and fore Part of the same Bone near the great Foramen.

TRICEPS.

TRICEPS.

Under this Appellation are comprehended four very distinct Muscles, which, from their Use, I name as follows.

ADDUCTOR FEMORIS PRIMUS

Origin. Arises, by a strong roundish Tendon,, from the upper Part of the *Os pubis*, next to the *Pectineus*, above the *Gracilis*; which turning into a compact fleshy Belly, it begins to be

Insertion. Inserted tendinous about the Middle of the *Linea aspera*, being continued down upon the same five or six Inches, sending out a Tendon which joins in with that of the fourth Head.

ADDUCTOR FEMORIS SECUNDUS

Origin. Arises from the *Os pubis*, immediately under the *Gracilis*, by a broad tendinous, but chiefly fleshy Beginning, and

Insertion. Is inserted into the *Linea aspera*, from a little below the lesser *Trochanter*, to the first Insertion of the last described Muscle.

ADDUCTOR FEMORIS TERTIUS

Origin. Arises lower down than the former, from the outer Edge of the *Os pubis* and *Ischium*, and, running obliquely towards the *Trochanter minor*,

Is

Is inserted near the *Gluteus maximus*. *Insertion.*

ADDUCTOR FEMORIS QUARTUS

Arises from the Protuberance of the *Ischium*, and the adjoining interior Part of that Bone, by a tendinous and fleshy Origination. *Origin.*

Is inserted by a round and long Tendon into the upper and rough Part of the inner and lower Appendix of the *Os femoris*, being affixed to that Bone a little above the *Condyle*, as also to some Part of the *Linea aspera*. *Insertion.*

The Use of all these four Muscles is to adduce or move the Thigh-Bone inwards, according to their different Directions. *Use.*

OBTURATOR EXTERNUS

Arises fleshy from all the lower Part of the *Os pubis* and *Ischium*, round the outer Circumference of their great *Foramen*, adhering firmly to its Membrane. *Origin.*

Is inserted by a strong Tendon into a Cavity at the Root of the great *Trochanter*. *Insertion.*

Its Use is to turn the Thigh-Bone obliquely outwards. *Use.*

In a Dog there is yet observable a small fleshy Muscle arising from the *Os ilium*, near the Edge of its Cavity, called *Acetabulum*; and, running obliquely over the Articulation

lation of the Femur, is inserted into the Bone between the Vastus internus and Cruraeus. I name it Musculus parvus in articulatione femoris situs.

C H A P. XL.

Of the Muscles of the Os COCCYGIS.

THE Bone joined to the Extremity of the *Os sacrum*, called *Coccyx*, has one Muscle on each Side, which I call

COCCYGÆUS * * *.

Origin. It arises tendineo-carnous from the acute Process of the *Os ischium*, between the Ligament that reaches from thence to the *Os sacrum*, and one of the Heads of the *Gemini*; from this narrow Beginning it gradually dilates itself into a thin fleshy Belly, interspersed with some tendinous Fibres.

Insertion. Is inserted into the whole Length of the *Os coccygis* laterally.

Use. Its Use is to draw that Bone inwards or forewards after the Excretion of hardened *Fæces*, &c.

N. B. The two Ligaments that antagonize this Pair of Muscles shall be exactly

ly

ly described in my *human and comparative Osteology*, which I design to publish in a short Time. In my Inquiry after a Muscle mentioned by the famous *Riolan*, under the Name of *Levator ani quintus*, which he says *Coccygi & ossis sacri extremo affigitur*, I happily discovered this Muscle.

The Tail of a Dog, which is only an Elongation of this Bone, is furnished with Abundance of Muscles subservient to its many Motions: But with their particular Descriptions I think it needless either to trouble myself or the Reader.

C H A P. XLI.

Of the Muscles of the LEG.

THE Leg, made up of two Bones called *Tibia* and *Fibula*, has eleven Muscles; of which, those that arise from the *Os innominatum*, and are inserted into either of these two Bones, are reckoned common both to the Thigh and Leg, whereas those which spring from the *Os femoris*, and end in the *Tibia*, are accounted proper to the Leg only.

S

MEM-

MEMBRANOSUS

Origin. Arises, by a narrow, tendinous and fleshy Beginning, from the fore Part of the Spine of the *Ilium* externally ; a little below the great *Trochanter* its fleshy Belly grows wholly tendinous, and covers the two *Vasti* and *Rectus*, being firmly affixed to all the *Linea aspera* in its Descent.

Insertion. Its proper Termination is into the superior Appendix of the *Tibia* laterally, between its Tubercle and the Head of the *Fibula*, sending down an Expansion to envelope the *Tibialis anticus*. From the Inside of the Thigh it is continued down upon the Leg, without any remarkable Adhesion to the Head of the *Tibia* in its Way thither.

Use. Its Use is to extend the Leg, and turn it a little outwards ; and, by virtue of its large *Aponeurosis*, it mightily strengthens the Action of the Muscles over which it spread, by keeping them tight in the Places, &c.

In a Dog it is divided into two very distinct Muscles : The superior springs from the Spine and Half of the Costa of the *Ossium*, forming a thick fleshy Belly as it descends streight upon the *Rectus* ; and, about three

three or four Inches below its Origin, it dilates into a membranous Tendon, by which it is inserted into the Patella and Head of the Tibia. Which Fascia or tendinous Expansion is extended and spread over that of the Biceps, and, together with it, covers all the Muscles of the same Side down to the Foot. Now, the contrary Disposition, or Decussation of the Fibres of these two Fasciæ, does very much strengthen the Action, and augment the Force of the Muscles that ly under them.

The inferior arises, from the lower Part of the superior Costa of the Ilium, thin and fleshy; a little below that it becomes membranous, and is expanded over the two Vasti and Rectus, firmly adhering to the Inside of the Thigh-Bone; its tendinous Expansion joins in with that of the Glutæus Medius below the great Trochanter.

SARTORIUS

Arises tendinous from the fore Part of ^{Origin.} the Spine of the Os ilium internally, but soon becomes fleshy, and, descending, runs down for some Space upon the Rectus, and then, going obliquely inwards, it passes over the Vastus internus, and about the Middle of the Os femoris over Part of the Triceps, between the Tendon of which
and

and the *Musculus gracilis* it descends farther.

Insertion. Is inserted tendinous into the fore Part of the *Tibia* internally, near its *Spine*, at a little Distance from the lower Part of its *Appendix*.

Use. Its Use is to move the Leg obliquely or bring one Leg and Thigh cross the other.

In a Dog it arises fleshy from the Costa near the Spine internally, and ends near the upper Part of the Inside of the Ridge that is in the Middle of the Tibia.

RECTUS

Origin. Arises fleshy from a Tubercle in the lower Part of the anterior *Spine* of the *Ilium*, and tendinous from the *Costa* ilii a little above the *Acetabulum*.

Insertion. Is inserted tendinous into the upper Part of the *Os patellæ*.

Use. Its Use is to extend the Leg.

In a Dog it arises tendinous and fleshy from the lower Part of the Costa ossis ilii and, forming a large round fleshy Body, descends as in Man.

VASTU

VASTUS EXTERNUS

Arises broad, tendinous and fleshy from *Origin.*
the great *Trochanter* and upper Part of the
Linea aspera.

Is inserted into the Head of the *Patella* *Insertion.*
laterally.

Its Use is to extend the Leg. *Use.*

VASTUS INTERNUS

Arises tendinous and fleshy from the *Origin.*
Os femoris, near the little *Trochanter*.

Is inserted tendinous into the Inside of *Insertion.*
the *Patella*, continuing fleshy lower down
than the last.

Its Use is to extend the Leg in bringing *use.*
it upwards.

N. B. From the lower Point of the
Patella there goes a strong thick Liga-
ment, which is affixed to a *Tubercle* on the
fore and upper Part of the *Tibia*; by vir-
tue of which the Extension of the Leg is
as easily performed, as if the Tendons of
the extending Muscles were inserted there.

In a Dog the Vastus internus arises from
the Neck of the Femur internally.

CRURÆUS

Arises fleshy from between the two *Tro-* *Origin.*
chanters of the *Femur.*

Is

Insertion. Is inserted tendinous into the *Patella* under the *Rectus*.

Use. Its Use is to assist in the Extension of the Leg or *Tibia*.

A Dog has a fifth Extensor, which, because it must be demonstrated first, I call Extensor tibiæ primus Cani proprius. It arises from the Spine and Half the Costa of the Ilium. In its Descent it adheres to the Sartorius by a Membrane, and terminates into the Patella.

GRACILIS

Origin. Arises by a thin and broad Tendon from the *Os pubis*, near its *Commisſure*; it soon grows fleshy, and, descending by the Inside of the Thigh,

Insertion. Is inserted tendinous into the Inside of the *Tibia* near the *Sartorius*.

Use. Its Use is to bend the Thigh and Leg inwards.

In a Dog it arises by a small Tendon from the Tuberosity of the Ischium, which ascends obliquely to the lower and fore Part of the Os pubis, where, going a little cross in a streight Line, it meets with that of its Fellow on the other Side, whereby the two Muscles become united. Near its Termination it sends off a Tendon that runs down upon the Tibia, and also a broad membranous Expansion

tion, which, uniting with that of the Biceps and Membranosus, is continued all over the Leg and Foot.

SEMINERVOSUS

Arises fleshy, in common with the longest Head of the *Biceps*, from the back Part of the Protuberance of the *Ischium*. Origin.

Is inserted by a flat Tendon at the Inside of the Ridge of the *Tibia*, about an Inch below the Termination of the Ligament that comes from the *Patella*. From its Tendon, about the Head of the *Tibia*, there goes off a *tendinous Expansion* continued down over the Muscles on the Inside of the Leg. Insertion.

Its Use is to bend the Leg backwards, *u. g.* and bring it a little inwards.

SEMIMEMBRANOSUS

Arises tendinous from the upper Part of the Tuberosity of the *Ischium*. In its Descent it runs under the Head of the *Biceps*, between which and the former Muscle it runs down the back Side of the Thigh. Origin.

Is inserted tendinous into the superior and back Part of the Head of the *Tibia*, where some Part of its Tendon is mixed with a Ligament that comes from the *Tibia*, and ends in both *Condyles*; or perhaps the Insertion.

the Ligament springs from the latter, and ends in the former.

Use. Its Use is to bend the Leg, by bringing it directly backwards.

BICEPS.

Origin. This Muscle has two Beginnings; its *superior* Head arises tendinous and fleshy in common with the *Seminervosus*, from the *Tuberosity* of the *Ischium*; the *inferior* arises from the *Linea aspera*, a little below the Termination of the *Glutæus major*, by a fleshy acute Beginning, which soon grows broader as it descends to join it with the other.

Insertion. Is inserted tendinous into the upper Part of the Head of the *Fibula*, Part of its Tendon reaching to the Head of the *Tibia* next it.

N. B. Near its Insertion it parts with a tendinous Expansion which covers the Muscles lying on the Outside of the Leg.

Use. Its Use is to bend the Leg.

In a Dog the thickest and largest Beginning of this Muscle arises partly from the Knob of the *Ischium*, and partly from a Ligament that goes from the *Os sacrum* to the foresaid Protuberance. In its Descent it spreads itself into a broad and fleshy Belly which covers Part of the *Gastrocnæmius*.

The

The other Head, which is very small, round and fleshy, arises by a long and small Tendon from the same Ligament. These two join and unite about the Ham; a little lower they grow tendinous, and are so inserted into the upper and fore Part of the Ridge of the Os tibiæ. This Muscle sends off a very broad and tendinous Expansion, which covers all the Muscles on the Outside of the Leg, firmly adhering to the Middle of the fore Part of the Os tibiæ in its Descent to the Foot: The posterior Part of this Fascia is formed into a distinct Tendon, which, joining in with the Chorda magna, ends in the Os calcis.

POPLITÆUS

Arises by a round Tendon from the *Origin.* Edge of a Cavity in the lower Part of the external Condyle of the Femur backwards; then, running under the Ligament that involves the Joint, and strictly adhering to Part of the Cartilago lunata, it becomes fleshy as it perforates the Ligament, and joins in with another fleshy Beginning proceeding from the same Membrane.

Is inserted into the superior Part of the *Insertion.* Tibia internally.

Its Use is to move the Leg obliquely *Use.* outwards, and assist in bending the same.

C H A P. XLII.

Of the Muscles of the Foot.

THE Foot, or *Tarsus*, is moved by six Muscles.

EXTENSOR TARSII SURALIS, *vel* EXTENSOR MAGNUS,

Is made up of four Heads or Beginnings; the two outermost form the Muscle commonly called *Gastrocnemius externus* and *Gemellus*.

Origin. One of them arises from the back Part of the internal *Condyle* of the *Femur*, and from the Bone itself, a little above it, by two thick and short Tendons. The other Head arises tendinous from a little Knob on the outer *Condyle*, just above the Beginning of the *Popliteus*, but soon turns fleshy. A little below the Joint their carnisous Bellies unite in a middle Tendon and below the Middle of the *Tibia* it ceases to be fleshy.

The two innermost are known by the Name of *Gastrocnemius internus* and *Soleus*. One Head comes from the upper and back Part of the Appendix of the *Fibula* continuing to derive some of its fleshy Fibres
brill

brillæ from the posterior Edge of that Bone, for some Space below the Meeting of the Tendons. The other Head springs from the back Part of the *Tibia*, about the Middle of the fleshy Part of the *Popliteus*, and from thence it is continued down the Edge of the Bone as low as the other.

The Tendons of these four Heads join, and make one great Tendon, called *Chorda magna* and *Tendo Achillis*.

Is inserted into the superior and hinder-^{Insertion.} most Part of the *Os calcis*, which, projecting beyond the *Os tibiæ*, occasions a considerable Distance between the Tendon and that Bone. The Middle and upper Part of these two inferior Heads, between the Bones whence they spring, is adorned with a tendinous Edge in Form of an Arch, under which all the great Vessels, &c. of the Leg pass.

Its Use is to extend the Foot, in bringing it backwards and downwards. ^{use.}

This great Extensor in a Dog has but two Beginnings, and those tendinous and fleshy from the two Ossa sesamoidæa that adhere to the two Condyles of the Femur, and fleshy from the lower Part of the same Bone.

EXTEN-

EXTENSOR TARSII MINOR, *vulgo*
PLANTARIS,

Origin.

Arises narrow, thin and fleshy from the upper and back Part of the external Protuberance of the *Os femoris*, adhering to the Membrane that involves the Joint in its Descent. It soon becomes a long, slender, thin Tendon, which, emerging from between the fleshy Bellies of the *Extensor magnus*, marches by the Inside of its greater Tendon, and

Insertion.

Is inserted at the Extremity of the *Os calcis* below the *Chorda magna*, and sometimes also it ends into the same Bone by two Tendons laterally.

Use.

Its Use is to assist the former in the Extension of the Foot.

In a Dog the fleshy Belly of this Muscle arises in common with the Flexor digitorum communis, to which it adheres inseparably, a good Way down; its Tendon is very distinct, and ends in the Os calcis.

N. B. The tendinous Aponeurosis, expanded over the Muscles in the Bottom or Sole of the Foot, immediately under the Fat, arises, by two narrow Beginnings, from the inferior and posterior Part of the *Os calcis*, hard by the Origin of the *Musculus sublimis*. The largest adheres firmly

to

to the fleshy Part of that Muscle, its membranous Edge being spread upon the adjacent *Adductor pollicis*, and is tacked down between these two Muscles to the Bones. It splits into four Tendons, each of them being soon after subdivided into two, between which the *Flexores digitorum* pass. Is inserted into both Sides of that cartilaginous Body that covers the first Joint of the Toes. The other Beginning of this *Expansio tendinosa* comes from the same Bone, but more externally, and, going forewards, covers one Half one of the *Abductor minimi digiti*, being joined to the former by a thin Tendon. Is inserted partly into the upper Part of the *Os metatarsi minimi digiti*, and partly by a long Tendon into the Extremity of the *Os metatarsi*, near its Articulation with the third Toe. Its Use is to preserve the subjacent Parts from being compressed in standing, walking, &c. as also to assist the Flexion of the first Joint of the Toes, by pulling that cartilaginous Body downwards.

TIBIALIS ANTICUS

Arises tendinous and fleshy from the *Origin.* Middle of the upper Appendage of the *Tibia* externally laterally; it runs down upon the Outside of the *Tibia*, receiving a fleshy dis-

disgregated Origination from that Bone near the Membrane that connects it to the *Fibula*, as also from the Membrane itself. It passes under an *annular Ligament* about the lower Part of the *Tibia*.

Insertion. Is inserted by a very large Tendon into the Inside of the *Os cuneiforme majus* next the *metatarsal* Bone of the great Toe, and by a small one into the upper Part of the last named Bone laterally.

Use. Its Use is to bend the Foot, by drawing it upwards.

In a Dog it arises fleshy from the upper and fore Part of the Tibia, filling up that Cavity that is between the Extensor digitorum pedis communis, and a thin bony Protuberance, or Ridge, observable about the upper Part of this Bone, to which, in its Descent, it firmly adheres. A little below its imbanding Ligament it parts with a small Tendon that runs upon all the Joints of the Pollex pedis, or great Toe, which it serves to extend.

TIBIALIS POSTICUS

Origin. Arises by a narrow fleshy Beginning from the fore Part of the *Os tibiæ*, just under its Appendix next the *Fibula*; thence passing through a Perforation in the upper Part of the Ligament that connects the

two Bones, it continues its Origin from the back Part of the last named Bone internally, and from near one Half of the upper Part of the *Tibia*, as also from the membranous Ligament between them.

Is inserted, having passed through the *Fissure* at the inner Ankle, tendinous into the upper Part of the *Os naviculare* internally laterally, being farther continued to the Side of the *Os cuneiforme medium*; besides it gives some tendinous Fibres to the *Os calcis*, and to the *Flexor pollicis brevis*. *Insertion.*

Its Use is to bring the Foot inwards. *Use.*

In a Dog this is but a very small Muscle, arising fleshy from the back Part of the *Fibula* and *Tibia*, between the *Flexor digitorum profundus* and the *Subpopliteus*; it turns into a long slender Tendon about the Middle of the last named Bone, and then it unites with that of the fore mentioned *Flexor*, a little before it divides in its Passage to the Toes.

PERONÆUS PRIMUS, seu POSTICUS,

Arises tendineo-carnous from the fore Part of the Head of the *Perone*, and soon grows into a pretty round fleshy Belly, made up of streight and compacted Fibres; it has also another Beginning, by a great *Origin.*
many

many thin and fleshy Fibres, from the upper and external Part of the *Fibula*, where it begins to rise into a round Edge, as also from the Hollowness between that and its anterior Ridge. It passes its long Tendon through the Channel at the inner Ankle together with the following; then, being reflected in the Sinuosity of the *Calcaneum*, it runs along the Cavity made in the *Os cuboides* under the Muscles in the Sole of the Foot.

Insertion. Is inserted into the Outside of the superior Part of the *Os metatarsi* that supports the great Toe, and by some tendinous Fibres into one of the *Ossa cuneiformia* next it.

N. B. The cartilaginous Bone in the Tendon of this Muscle, first (I think taken Notice of by *Vesalius*, I have observed to be hollowed, or sinuated, for the better Reception of a little Protuberance in the Edge of the *Os cuboides*, upon which it plays as on a Pulley.

Use. Its Use is to move the Foot outwards and also to bend it a little.

In a Dog it arises fleshy and a little tendinous from the Outside of the Perone, just where it begins to adhere closely to the Tibia from some Part of which it also continues a carnosus Origin, and ends in the Os metatarsi that sustains the fore Toe.

PERONÆUS SECUNDUS, seu ANTICUS,

Arises, by an acute fleshy Beginning, Origin.
from above the Middle of the external
Part of the *Fibula*; it has another carnous
Origination from the outer Side of the an-
terior Spine of this Bone, as also from its
round Edge externally backwards. Its
Tendon passes through the *Fissure* of the
external Ankle, being there included un-
der the same Ligament with that of the
following, and a little farther it runs un-
der a particular one of its own.

Is inserted into the upper and fore Part Insertion.
of the *Os metatarsi* that supports the little
Toe, by several tendinous Filaments, one
or two of which are carried streight down,
and join in with the Tendon that extends
that Toe.

Its Use is to pull the Foot and Toes Use.
outwards.

In a Dog it arises from a Protuberance in
the Head of the Tibia laterally next the Pe-
rone, from the upper Part of which it arises
also, and then proceeds as in Man.

C H A P. XLIII.

Of the Muscles common to the FOUR LESSER
TOES.

THE Muscles of the Toes are either common to all the four lesser Toes, or they are proper and peculiar to the great and little Toes, or common to both these.

The common to all the four lesser are fifteen in Number, to wit, two *Flexors*, two *Extensors*, four *Lumbricales*, and seven *Interossei*.

EXTENSOR LONGUS

Origin. Arises, by a narrow, tendinous and fleshy Beginning, from the superior and external Part of the Head of the *Tibia*, next the *Fibula*, and by a fleshy Origin from the upper Part of the last named Bone dividing into four Tendons, and passing under the *Ligamentum annulare*,

Insertion. Is inserted, together with the following into the upper Part of the second Bone of each small Toe, sending off on both Sides a small Tendon to the last Bone of the Toes, which unites with its Fellow a little before its Termination.

It

Its Use is to extend all the Joints of the four little Toes. *use.*

N. B. *Vesalius's* ninth Muscle of the Foot seems to be very distinct from this *Extensor*, arising from about the Middle of the *Spine* of the *Fibula*, to which the Membrane that ties it to the *Tibia* is connected by a great many fleshy Fibres, which run obliquely downward to their Tendon, not unlike the *Stamina* of a Feather. It terminates, being often divided into two or three Tendons, in the upper Part of the *Os metatarsi* of the little Toe. This Muscle is not to be found in a Dog.

In a Dog the *Extensor longus* springs by a round Tendon from the fore Part of the external Apophysis of the Femur, near the Channel of the Patella, and, descending thro' a Sinus in the Head of the Tibia, it grows fleshy; and then, marching down the same Bone, and passing under the Ligament that binds it in near its Extremity, it splits into four Tendons, which are inserted into the upper Part of the last Bone of every Toe, near the Setting on of the Claws, firmly adhering to the *Ossa sesamoidæa* of the Joints, as it passes over them.

N. B. Here, as well as in the fore Foot, are observable two springy Ligaments that keep the last Bone of every Toe in an erect or sus-

suspended Posture, for the Conveniency of walking, and for saving of this Muscle from being always in Action. But more of this in my comparative Osteology.

EXTENSOR BREVIS

Origin.

Arises fleshy and a little tendinous from the fore Part of the *Os calcis* externally near its Conjunction with the *Cuboides* and, dilating itself into a fleshy Belly, easily divisible into four Portions, passes over the upper Part of the Foot under the Tendons of the former.

Insertion.

Is inserted by four Tendons into the second Bone of the Toes.

Use.

They serve to extend the Toes.

In a Dog it seems to be two distinct Muscles, of which one arises tendinous, the other fleshy, from the upper and fore Part of the Os calcis, where it joins the Astragalus externally. The innermost, soon growing fleshy makes but one Tendon, which runs to the Toe next the great one; and, about the Middle of the first Joint, it loses itself in the Tendon of the Longus: The outermost gives Tendons to the rest of the Toes.

PERFORATUS, seu FLEXOR SUBLIMIS,

Origin.

Arises, by a narrow fleshy Beginning from the lower protuberating Part of the

Os calcis, between the *Abductors* of the great and little Toes ; but, descending, soon dilates into a thick fleshy Belly.

Is inserted by four Tendons, which split, *Insertion.*
unite, decussate, subdivide, and run close by the Edges of the Bones, like those of the *Fingers*, into the second *Phalanx* of the four lesser or outermost Toes.

Its Use is to bend the second Joint. *Use.*

In a Dog it ariseth fleshy from the back Part of the external *Protuberance* or *Condyle* of the *Os femoris*, and a little tendinous from the *Os sesamoidæum* that has a loose Connection with the same. Its fleshy Belly lies under the *Gastrocnemius*, or *Extensor suralis*, from whose external Head it can scarcely be separated ; but, as soon as it grows tendinous, it climbs along the Tendon of that Muscle down to the *Os calcis*, which it passes over, and then splits into four thin Tendons, which form a Sort of Case, with a little Hole on its Outside for the Transmission of the Tendons of the following. About the Middle of the first Internode the Half of this *Involucrum* is discontinued, and the Tendon is inserted broad, without any Division, into the Beginning of the second Joint.

N. B. *In the Middle* of this Tendon, as it runs over the End of the *Calcaneum*, Nature has wisely placed a little hard cartilaginous

ginous Body, which not only prevents the Part of the Tendon from being injured by the sharp Extremity of the Bone, but also strengthens the Action of the Muscle itself; and so like a Rouler, or Patella, renders its Motion more easy and glib in running.

PERFORANS, seu FLEXOR PROFUNDUS,

Origin.

Arises by an acute Tendon, which soon becomes fleshy, from the back Part of the Tibia, about two or three Inches from its Head above the Termination of the *Popliteus*; which Beginning is continued down the inner Edge of this Bone by short fleshy Fibres ending in its large Tendon. Its other Origination is by a thin and disgregated Tendon from the Edge of the *Fibula*, interspersed with Abundance of *carnous Fibrillæ*: Betwixt this double Order of Fibres the *Tibialis posticus* lyes inclosed. Having passed under two imbanding *Ligaments*, it marches through the Sinuosity of the *Os calcis*, and about the Middle of the Sole of the Foot divides into four Tendons, which, passing through the Slits of the *Perforatus*, are

Insertion.

Inserted into the upper Part of the last Bone of all the lesser Toes.

N. B. It parts with a small Tendon just before its Division, which, running forewards,

forewards, communicates with that of the *Flexor pollicis longus*.

Its Use is to bend the Toes.

use.

N. B. The *Massa carnea*, or *Musculosa carnis portio* JA. SILV. in the Sole of the Foot, may well be reckoned a third Head or Beginning of this Muscle; for it arises by a thin fleshy Origin from most Part of the Sinuosity of the *Calcaneum*, which is continued foreward for some Space on the same Bone. Besides, it has a thin tendinous Beginning from the fore Part of the lower Protuberance of this *Os calcis*, and, soon becoming all carnous, it joins in, sloping, with the Tendon of this *Flexor*, just at its Division into four Tendons. This *Moles carnea* is wanting in a Dog.

In a Dog this Muscle arises fleshy from all the upper Half of the Fibula that stands off at a Distance from the Tibia, filling up most of the Space between them. It splits into five Tendons; one runs to the great Toe, which, in this Animal, is less than any of the four, the rest pass through so many Cases, made by the Tendons of the *Sublimis*, to their Insertions at the third Bone of each Toe.

LUMBRICALES

They all arise from the Tendons of the *Perforans*, at some Distance from the Union

nion of the *Massa carnea* with the single Tendon of that Muscle; are

Insertion. Inserted by four small Tendons into the Inside of the first Joint of the lesser Toes, next the great Toe.

Use. Their Use is to assist in bending the Toes.

INTEROSSEI

The seven *interosseous* Muscles have the same Situation with those in the Hand, but differ in their *Origin*, *Insertion* and *Use*.

The first, or *Abductor indicis pedis* Cow-
Origin. *peri*, arises from all the Outside and fore Part of the *metatarsal* Bone of the Toe next the great one.

Origin. The second, or *Adductor ejusd.* fills up all the Distance between this and the *Os metatarsi* of the middle Toe, from the Sides of both which it arises.

Origin. The third, or *Adductor medii digiti ejusd.* belongs to the Side of the second lesser Toe next the first, and is only conspicuous internally, arising from all the fore Part of this *metatarsal* Bone, and by a few Fibres from the upper Part of the first also.

Origin. The fourth, or *Abductor medii digiti ejusd.* which runs along the first Joint of this Toe, on the other Side, arises externally from the *metatarsal* Bone of this, and
of

of that which supports the third Toe, filling up all the Space between them.

The fifth, or *Abductor tertii digiti ejusd.* arises from the upper Part of the *metatarsal* Bone that stays the third Toe, and also from the Tendon of the *Musculus peroneus longus*. Origin.

The sixth, which belongs to the other Side of this third lesser Toe, arises from the Sides of this *metatarsal* Bone, and from that which supports the little Toe, filling up all the Space between those on the back Side of the Foot. It has also a tendinous Adhesion to the long *Peronean Muscle*. Origin.

The seventh, or *Adductor minimi digiti ejusdem*, arises from the upper Part of the *Os metatarsi minimi digiti*, being also affixed to the foresaid Tendon. Origin.

They are all inserted, partly into the *Ossa sesamoidæa*, placed on the Articulation of the first Bone of the Toes with the *Ossa metatarsi*, and partly on the Side of the same Bone. Insertion.

Their Use is to move the four lesser Toes laterally; for, when the *Interni* act, the Toes are drawn inwards towards the great Toe, and, when the *Externi* act, they are pulled nearer the little one, or are all drawn outwards from the great one. Use.

The four streight and two oblique Muscles, situated in the Hollow of a Dog's hind Foot, run altogether conform to those already described in his fore Foot.

C H A P. XLIV.

Of the Muscles of the GREAT TOE.

THE *Pollex digitorum pedis*, or great Toe, has six Muscles.

EXTENSOR LONGUS

Origin. Arises, by an acute, tendinous and fleshy Beginning, from near the upper Part of the *Fibula*, and from the Membrane that connects it to the *Tibia*.

Insertion. Is inserted tendinous into the upper Part of the last Bone of the great Toe.

Use. Its Use is to extend that Joint by pulling it upwards.

EXTENSOR BREVIS *Cowperi*,

Origin. Arises tendinous and fleshy from the fore Part of the *Os calcis*, near its Articulation with the *Astragalus*.

Insertion. Is inserted tendinous near the upper Part of the second Bone of the great Toe.

Use. Its Use is to extend this *Internode*.

Thi

The Pollex pedis in a Dog, being armed with a Claw much more hooked than any of the other four Toes, is joined to one of the Bones of the Tarsus near the upper Part of the Os metatarsi that answers the fore Toe; whence the hind Foot of this Animal does much more resemble the Hand of a Man than his fore Foot does.

This Part is extended by two Muscles, one proper, which arises fleshy from the Fibula and Membrane that connects it to the Tibia; its small Belly soon turns into a fine Tendon, which, adhering to that of the Tibialis anticus, runs on to the last Joint of this Toe, where it ends.

The other is a Tendon cast off from the Tibialis anticus already described.

FLEXOR LONGUS

Arises, by a sharp, tendinous and fleshy Origin. Beginning, from the upper and back Part of the Fibula, being continued down the same Bone almost to its Extremity, passing its Tendon under a Ligament at the inner Ankle.

Is inserted into the last Bone of the great Insertion. Toe, giving a Tendon to the Os calcis in its Way.

Its Use is to bend this Joint.

Use.

FLEXOR

FLEXOR BREVIS

Origin. Arises tendinous from the *Os cuboideum* and *Os cuneiforme* that jets out in the Bottom of the Foot, it being inseparably united both with the *Adductor* and *Abductor pollicis*.

Insertion. Is inserted into the external *Os sesamoidæum* of the great Toe adhering to the *Adductor*.

Use. Its Use is to bend this second Joint.
In a Dog this Range of Bones is bended by a Slip cast off from the Flexor profundus

ADDUCTOR

Origin. Arises, by a long, thin, disgregated Tendon, from the *Os calcis*, under the tendinous Part of the *Massa carnea*, from the *Os cuboides*, from the *Os cuneiforme medium*, near the Insertion of the *Peroneus primus*, and from the upper Part of the *Os metatarsi* of the second Toe; it is soon dilated into a pretty large Belly.

Insertion. Is inserted into the external *Os sesamoidæum* of the great Toe.

Use. Its Use is to bring the great Toe nearer the rest,

ABDUCTOR

Origin. Arises fleshy from the Inside of the lower Protuberance of the *Os calcis* laterally

rally, and tendinous from a little Tubercle in the same Bone, near the *Os cymbiforme*; it only adheres to the other Bones on the Inside of the Foot, filling up the Hollowness in the *Os metatarsi pollicis*.

Is inserted into the internal *Os sesamoidæum* of the first Bone of the great Toe, its Tendons being farther continued upon the same Bone laterally. *Insertion.*

Its Use is to pull the great Toe from the rest.

In a Dog these two last described Muscles are never found.

C H A P. XLV.

Of the Muscles of the LITTLE TOE.

THE little Toe has two Muscles.

ABDUCTOR

Arises fleshy and tendinous from the *semicircular* Edge of a Cavity on the Outside of the inferior Protuberance of the *Os calcis*; it has another tendinous Beginning from the *Os cuboides*, and a third from the upper Part of the *Os metatarsi minimi digiti*. *Origin.*

Is inserted into the upper Part of the *Insertion.*
first

first Bone of the little Toe externally laterally.

Use. Its Use is to draw the little Toe outwards from that next to it.

FLEXOR PRIMI INTERNODII MINIMI
DIGITI *Cowperi*,

Origin. Arises fleshy from the Outside of the *metatarsal* Bone that sustains this Toe, below its protuberating Part; besides, it has another Beginning from the Tendon of the *Peroneus primus*, as it runs in the *Sulcus* or Furrow of the *Cuboides*.

Insertion. Is inserted into the Cartilage that is placed upon the Articulation of the first Joint of this Toe.

Use. Its Use is to bend this Joint.
In a Dog these two are wanting.

C H A P. XLVI.

Of the Muscles common to the GREAT and LITTLE TOES.

TRANSVERSALIS PEDIS *Jul. Cass. Placent.*

Origin. **A** Rises tendinous from the external *Osses sesamoidæum* of the great Toe, firmly adhering to the tendinous Part of the *Adductor pollicis*; soon growing fleshy it passes

passes over the Extremity of two of the *metacarpal* Bones, between them and the *Flexores digitorum*; and then, growing broader,

Is inserted, partly into a Tendon that *Insertion.* proceeds from the *Expansio tendinosa* in the Sole of the Foot, and partly into that cartilaginous Ligament that covers the Articulation of the first Joint of the third lesser Toe with its *Os metatarsi*, some of its fleshy Fibres being continued upon the same Part of the little Toe.

Its Use is to bring the third and fourth *use.* lesser Toes nearer the other two and the great one.

In a Dog there is no such Muscle.

Of the PRÆPUTIUM and URETHRA in a Dog.

TO compleat the *Canine Myology* there remain yet to be described the Muscles of the *Præputium* and *Urethra*.

The *Præputium*, which in a Man has no Muscle, is provided with one Pair and a single one in a Dog. The first I call

Præputium Adducens, which proceeds from the *Membrana carnosa*, near the *Cartilago*

tilago ensiformis; as it descends on each Side of the Linea alba it grows thicker and narrower, and is inserted into the Præputium laterally. When this acts, I believe, it serves to bring the Præputium over the Glans after Copulation, (tho' Blasius affirms, that it draws the Penis forwards tempore coitus) being therein much assisted by the Contraction of two Ligaments which come from about the Middle of the Linea alba, and end in the Præputium. The second is

Præputium Abducens, or Retrahens, which is a single small Muscle arising from the Sphincter ani, and firmly adhering to the Accelerator urinæ, from which it receives two fleshy Slips, as before noted, runs up along the Urethra, and terminates in the lower Part of the Præputium, where its dilated Fibres are expanded all over it. Its Use is to draw back the Præputium, and so help to denude or uncover the Glans in order to Coition. It may likewise serve, in some Measure, to dilate and keep open the Urethra at that Time, lest the Seed should meet with any Impediment or Let in this very long Passage.

That Part of the Urethra between the Postrates and the Union of the two Corpora cavernosa, being two or three Inches in Length, according to the Bigness of the Animal,

Animal, is surrounded by a thin fleshy Muscle, contrived and placed there on purpose for to compress the many Glands that open within this Passage, and so oblige them to discharge their Contents, which serve as a Vehiculum to foreward the descending Semen tempore coitus; to which also the Contraction of its fleshy Fibres, in narrowing this Canal, contributes in a great Measure, as Mr. Cowper has well observed in Boars and in Bulls.

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A N

APPENDIX

Concerning the Muscles of the CLITORIS
and VAGINA in a Woman.

THE *Clitoris* is furnished with two
Pair of Muscles.

The first, discovered by *Fallopious*,
Origin. Arises tendinous and fleshy from the
Os ischion internally, near its Conjunction
with the *Pubis* ; in its Ascent it adheres
to the inner Edge of the last named Bone,
and

Insertion. Is inserted fleshy into the *Crus* or Be-
ginning of the *Clitoris*.

This Muscle, with its Partner, serves
for the Erection of this Part, by the de-
taining the Blood in its cavernous Sub-
stance.

Use. The second Muscle belonging to the
Clitoris, is, by *DeGraaf*, very improperly
called *Sphincter vaginae*, since it does not
surround that Part with circular Fibres
tho' it has the same Effect as tho' it did.

Origin. It arises fleshy, partly from the *Sphin-*
cter ani, and partly from a white hardish
Sub-

Substance placed under the Skin in the *Peronæum*, between the lower Part of the *Pudendum* and the *Anus* ; from thence it climbs up the Side of the *Vagina*, near its outer Orifice, covering all the *Corpus vaginae vasculo-spongiosum*, which is nothing but a Production of the *Clitoris*, and

Is inserted into the Body or Union of *Insertion.* the *Crura clitoridis* laterally.

Its Use is the same with the preceeding *Use.* Muscle ; and besides, by compressing the *Corpus spongiosum*, or *Plexus retiformis*, it serves to straiten the Orifice of the *Vagina*, by hindring the Blood in its Return from thence.

The *Vagina uteri* is furnished with two Pair of Muscles, not mentioned by any Author as far as I know.

The first arises from the inner Edge of *Origin.* the *Os pubis*, mid Way between the *Ischion* and the Beginning of the *Crus clitoridis* ; it ascends a little obliquely, and

Is inserted into the *Vagina*.

Its Use is to dilate the Sheath, and open *Use.* the Extremity of the *Meatus urinarius*, its Termination being very nigh the Orifice of that Passage.

The

Origin. The second arises tendinous and fleshy from the *Os pubis* internally, in common with the *Levator ani*.

Insertion. Is inserted into the upper Part of the *Vagina*, at the Side of the *Meatus urinarius*, or *Collum vesicæ*.

Use. This acting pulls up the *Vagina*, and so constricts the Neck of the Bladder after the Evacuation of Urine.

N. B. These Muscles can never be well raised, unless the *Os pubis* be taken off from the *Ilium* and *Ischium*, with the *Intestinum rectum*, the *Vagina* and *Vesica urinaria* left adhering to it.

A N

Etymological Table

O F T H E

MUSCLES.

The Muscles take their NAMES,

I. *From their Action or Use.*

A*Bductor*, from *abducere*, to move or draw from.

Accelerator, from *accelerare*, to hasten or dispatch.

Adductor, from *adducere*, to move or bring towards.

Annuens, from *annuere*, to nod the Head forewards, as when we give our Assent to any Thing.

Attollens, from *attollere*, to lift or raise up.

Caput concutiens, from *concutere*, to shake.

Constrictor, from *constringere*, to straiten or bind fast.

C*remaster*,

Cremaster, or *Suspensorius*, from κρεμάω, *suspendo*.

Depressor, from *deprimere*, to pull or draw down.

Detrusor urinæ, from *detrudere*, to thrust or squeeze out of.

Diaphragma, from διαφράττω, *intersepio*, because it divides the Cavity of the *Thorax* from that of the *Abdomen*.

Dilatator, from *dilatare*, to enlarge or widen.

Distortor oris, from *distorquere*, to pull or set awry.

Extensor, from *extendere*, to extend or stretch out.

Flexor, from *flectere*, to bow or bend.

Indicator, from *indicare*, to shew or point, because that Finger is used in the Demonstration of any Thing.

Levator, from *levare*, to lift or pull up.

Masseter, from μασσάομαι, *manduco*, *comedo*, to eat.

Pronator, from *pronus*, which denotes the Posture of lying with the Face downwards; but the Word is here taken for turning the Palm only downwards.

Renuens, from *renuere*, to nod the Head back, as when we deny or refuse any Thing.

Retra--

Retrahens, from *retrahere*, to draw back.

Sartorius, from the Use Taylors make of it to fit cross-legged.

Sphincter, from *σφιγγω*, *constringo*, to shut.

Supinator, from *supinus*, which denotes that Posture of lying upon the Back with the Belly upwards; but in this Case it is taken for turning the Palm only upwards.

Tensor, vide *Extensor*.

II. From their Beginning or Origin.

Graphoides, or *Styliformis*, from *γραψίς*, *stylus*, because of its supposed Origination from the Process of the *Temple-Bone*, so called. The *Musculus digastricus* was thus named by the Ancients.

Pectineus, or *Pectinalis*, from *Pecten*, i. e. *Os pubis*.

Pterigoides, or *Aliformis*, from *πτέρυξ*, *υλος*, *ala*, a Wing, and *εἶδος*, *forma*.

Sacer, from the *Os sacrum*.

Sacro-lumbalis, from the last named Bone, and from the transverse Processes of the Loins.

Semifibuleus, from one Half of the *Fibula*.

Transversalis, from the transverse Processes of the Back and Neck.

Zygomaticus, from the Bone called *Ζύγωμα*, which is derived from *ζυγος*, vel *ζυγ-*

ζύγος, *jugum*, a Yoke ; *Os jugale*, the Yoke-Bone.

III. From their Colour.

Lividus, i. e. *Pectineus*, from its black and bluish Colour.

IV. From their Composition and Variety of Parts.

Biceps, from its having *Bina capita*, two Heads or Beginnings.

Bicornis, from its having two Origins, like so many Horns.

Complexus, from its being made up of many tendinous and fleshy Fibres, intricately mixed one with another.

Complicatus is another Name for the same Muscle, having the same Etymology.

Digastricus, or *Biventer*, from δις & γαστήρ because it has two fleshy Bellies, with a Tendon interveening.

Gemellus, from its having a double Origin.

Gemini, from their being two distinct Muscles, united only by a Membrane.

Quadriceps, from its arising by four Heads or Beginnings.

Triceps, from its arising by three Heads.

V. From

V. From the Course and Direction of their Fibres.

Obliquus. Orbicularis. Rectus. Transversalis.

VI. From their Figure or Shape.

Cucullaris, from the Resemblance the lower Part of this Pair of Muscles has to that Part of a Monk's Hood that lyes between his Shoulders.

Deltoides, or *Deltiformis*, from $\Delta\acute{\epsilon}\lambda\tau\alpha$, the fourth Greek Letter, and $\epsilon\acute{\iota}\delta\omicron\varsigma$, *forma*.

Fascialis, i. e. *Sartorius*, from its crossing some of the Muscles of the Thigh and Leg, like a Swath-Band or *Fascia*.

Fascia lata, from its inclosing most of the Muscles that ly on the *Os femoris*.

Lumbricales, from the Likeness of their Shape to the common Earth-Worm.

Marsupialis, because the *Gemini*, by some reckoned a Part of this Muscle, do form a *Marsupium*, or fleshy Purse, by their membranous Connexion through which its Tendons pass.

Pyramidalis, because it arises by a broad *Basis*, and terminates by a narrow Point like a Pyramid, or pyramidal Figure, which is broad beneath, and sharp or narrow above.

Pyriformis, from the faint Resemblance it bears to a Pear.

Quadratus, from its square or quadrilateral Figure.

Rhomboides, from $\rho\acute{o}\mu\beta o\varsigma$, a Diamond Figure, and $\epsilon\acute{\iota}\delta o\varsigma$, *forma*, i. e. a Diamond-like Figure, whose opposite Sides and opposite Angles are equal.

Rotundus, from its being round and spherical.

Scalenus, from the Figure of a Triangle whose three Sides are all unequal, called in Greek $\sigma\kappa\alpha\lambda\eta\nu o\varsigma$.

Serratus, from its being divided at its Termination into several distinct fleshy Portions, which are not unfitly compared to the Teeth of a Saw, called *Serra* in Latin.

Soleus, or *Soleus*, from *Solea*, a Sole-Fish.

Splenius, from *Splenium*, a Ferula, or rounded Splint, which Surgeons are wont to apply to the Sides of a broken Bone.

Teres, from its being long and round.

Trapezius, from $\tau\rho\acute{\alpha}\pi\epsilon\zeta\alpha$, which denotes in Geometry, a Kind of quadrilateral Figure; but properly it signifies *mensa*, a Table; hence some call this the *Table Muscle*.

Triangularis, from *triangulum*, which is a Figure with three Corners.

VII. From their Insertion or Termination.

Ciliaris, from *cilia*, or the soft cartilaginous Edges of the Eye-Lids, into which the *Tarsi*, or Hairs, are fixed.

Mastoidæus, or *Mastoides*, i. e. *mammiformis*, from *μάσος*, *uber*, *mamma*, & *εἶδος*, *forma*.

Semispinalis, from Half of the spinal Processes of the Back.

Spinalis, from several of the *Spines* of the Neck.

VIII. From their Origin and Insertion.

Basio-glossus, from *βάσις*, the fore Bone of the *Os hyoides*, and *γλῶσσα*, *lingua*, the Tongue.

Cerato-glossus, from *κέρας*, *ατος*, *cornu*, & *γλῶσσα*, *lingua*.

Coraco-brachialis, from the *Processus* called *κόρακοεῖδής*, from *κόραξ*, *κός*, *corvus*, & *εἶδος*, *forma*, and *brachium*.

Coraco-hyoidæus, from the last named Process and the *Os hyoides*.

Crico-arytænoidæus, from *κρίκος*, *annulus*, and *ἀρὺταινα*, *guttus*, seu *gutturium*, an Ewer or Cruet.

Crico-thyreoidæus, as above, and from *θυρεοεῖδής*, i. e. *scutiformis*.

Genio-

Genio-glossus, from γένειον, *mentum*, the Chin.

Genio-hyoidæus, as above, and from the *Os hyoides*.

Glosso-staphylinus, from γλῶσσα, *lingua*, and σαφυγή, *uva*, *uvula*, *gargareon*.

Hyo-thyreoidæus, from the *Os hyoides*, and θυρεοειδής, *scutiformis*.

Mylo-hyoidæus, from μύλοι, *dentes molares*.

Occipito-frontalis, from the *Occiput*, and the Skin of the *Os frontis*.

Palato-staphylinus, from the *Os palati*, and σαφυγή, *uvula*.

Salpingo-staphylinus, from σάλπιγξ, *ιγγος*; *tuba*.

Sterno-hyoidæus, from the *Os sterni* or *pericloris*.

Sterno-thyreoidæus, as above.

Stylo-chondro-hyoidæus, from σῦλος, *stylus*; i. e. *Processus styloformis*, from χόνδρος, *cartilago*, &c.

Stylo-glossus, from σῦλος & γλῶσσα.

Stylo-hyoidæus, as above.

Thyreio-arytænoidæus, from θυρεός, *scutum*.

Thyreio-staphylinus, as above.

It is worth observing, that the first Word denotes always the Origin, and the last the Insertion of the Muscle.

Trachelo-mastoidæus, from τράχηλος, *collum*,
cervix, its chief Origin being from the
Vertebræ of that Part.

IX. From the Parts they belong to.

Coccygæus, from κόκκυξ, *cucullus*, i. e. *Os*
coccygis, a Bone so called from its Shape.

Oesophagæus, from οισοφάγος, *œsophagus*,
gula, the Gullet.

Pharyngæus, from φάρυγξ, *guttur*, *fauces*.

Cephalo-pharyngæus, from κεφαλή, *caput*.

Chondro-pharyngæus, from χόνδρος, *cartilago*.

Crico-pharyngæus, from κρικος, *annulus*.

Glossopharyngæus, from γλῶσσα, *lingua*.

Hyo-cerato-pharyngæus, as above.

Mylo-pharyngæus, from μύλοι, *dentes molares*.

Pterigo-pharyngæus, from πτέρυξ, *ala*.

Salpingo-pharyngæus, from σάλπιγξ, *tuba*.

Stylo-pharyngæus, as above.

Syndesmo-pharyngæus, from σύνδεσμος, *vin-*
culum, *ligamentum*.

Thyreo-pharyngæus, from θυρεός, *scutum*.

Rineus, from ριν, ρινός, *nasus*.

Stapideus, from *stapes*.

X. From the Parts they constitute or
 compose.

Buccinator, because it makes up the great-
 est Part of the Cheek, called *Bucca*.

the

Gastrocnemius, from γαστροκνημία, *sura*, the Calf of the Leg, which comes from γαστήρ, *venter*, & κνημῆ, *tibia*.

Glutæus, from γλῡτός, *nates*.

N. B. The *Pharyngæus*, with all its various Orders of Fibres, might have been described under this Head, as well as in the former.

Suralis, from *sura*, the Calf of the Leg.

Θέναρ, seu *Thenar*; thus the *Greeks* call the rising and prominent fleshy Part in the Palm of the Hand, which Word seems to come from θειναι, *percutere, verberare*.

XI. *From their passing through some Parts.*

Perforans, because its Tendon passes thro' a Slit or Fissure in that of the *Perforatus*.

Trochlearis, from passing its Tendon thro' a Cartilage called *Trochlea*, a Pulley.

XII. *From their Quantity or Magnitude with respect to one another.*

Brevis.

Gracilis, from its being the thinnest and slenderest Muscle of the *Tibia*.

Latissimus, from its being the broadest and largest Muscle that lyes on the Back or Neck.

Longissi-

Longissimus, from its being the longest of those of the Back.

Longus. Magnus. Major. Maximus.

Medius. Minimus. Minor. Parvus.

These need no Explication.

Platysmo-myoides, i. e. *expansio vel dilatatio muscularis*, from *πλάτυσμα*, *latum lintum*, vel aliquid simile; or from *πλάτυσμός*, *dilatatio*, and *μυς*, *musculus*, & *εἶδος*, *forma*.

Vastus, because it and its Fellow are the two biggest and thickest Muscles belonging to the Leg or *Tibia*.

XIII. From their Situation or Position.

Anconeus, or *Angoneus*, from *ἀγκῶν*, *cubitus*, but, in a strict Sense, is taken for that Process of the Cubit called the *Elbow*.

Anticus, that which lyes in the fore Part.

Antithenar, from its Situation, which is opposite to the *Thenar*, or from its Use, which is contrary to it.

Brachæus, from *βραχίων*, *brachium*.

Cruræus, from *crus*, i. e. *femur*.

Cubitalis, } from *cubitus*, i. e. *ulna*.

Cubitæus, }

Externus.

Fibulæus, from *fibula*.

Hyp-

Hypothenar, because it is situate below the
Thenar.

Iliacus, from the *Os ilium*.

Immersus, from its being sunk, as it were,
under the rest of the Muscles of the
Scapula.

Infraspinatus, below the *Spina scapulae*.

Intercostales, from their being placed *inter*
costas, or between the Ribs.

Internus.

Interosseus, between the *metacarpal* and *metatarsal* Bones of the Hand and Foot.

Interspinales, between the Spines of the
Neck.

Intertransversales, between the transverse
Processes of the Neck or Loins.

Intervertebrales, from their being placed
upon and between the Bodies of some
of the *Vertebrae* of the Neck.

Palmaris, from the spreading of its Ten-
don upon the Palm of the Hand.

Plantaris, from the supposed spreading of
its Tendon upon the Sole of the Foot,
under the Skin.

Pectoralis, from the *Os pectoris*.

Peronæus, from the *Perone*, *περόνη* in
Greek, the smallest Bone in the Leg.

Popliteus, from *poples*, the Ham.

Posticus, that is situated behind, or on the
back Side.

Psoas,

Psoas, from $\Psi\omicron\alpha$, *lumbus*, the Loins.

Radialis, }
Radæus, } from *radius*.

Subclavius, from the *Clavicula*, under which it is placed.

Subscapularis, under the *Scapula*.

Supraspinatus, above the Spine of the *Scapula*.

Temporalis, from *tempora*, the Temples.

Tibialis, }
Tibiæus, } from *tibia*.

Ulnaris, from *ulna*.

XIV. From their Substance.

Membranofus, because of its broad Membrane-like Tendon.

Semimembranofus, from its being half membranous.

Seminervofus, }
Semitendinosus, } from its being half tendinous.

A LIST of the Muscles found in
a human Body, that are not
met with in a Dog.

Pyramidalis abdominis.

Musculus frontalis verus.

Musculus nasi proprius, seu Rineus.

Elevator labiorum communis.

Depressor labiorum communis.

Stylo-chondro-hyoidæus.

Coraco-hyoidæus.

Salpingo-staphylinus.

Thyreo-staphylinus.

Subclavius.

Levator ani externus.

Serrator minor anticus.

Palmaris longus.

Palmaris brevis.

One of the *Extensores carpi radialis.*

Extensor tertii internodii indicis.

Adductor indicis.

All the Muscles of the Thumb, except one.

Flexor and one *Extensor.*

All the Muscles of the little Finger, except
the *Extensor.*

Supinator.

Supinator longus.

Coccygæus.

Tendinosa expansio in planta pedis.

Paronum pedis Vesalii.

Massa carnea in planta pedis.

All the Muscles in the great Toe, except

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Abductor minimi digiti.

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An Account of what Dr. Douglass obliged himself to perform in a Course of human and comparative ANATOMY.

In the OSTEOLOGICAL Part.

1. **T**O discourse on the *Bones*, *Cartilages* and *Ligaments* in general.
2. To examine the *Bones* in particular, all of them being so prepared as their inner Substance may be viewed as well as their outer.
3. To shew the Articulations of the *Bones*, both in a *Skeleton* and in a fresh Subject.
4. To demonstrate the *Periosteum*, the *Medulla*, the Entrance and Exit of the Blood-Vessels, with all the *mucilaginous Glands* seated in or near the Joints.
5. To compare the *Bones* of a *Fœtus* with those of an Adult, and to give an Account of their Accretion from Conception to the Birth.
6. To adjust the Difference between a male and a female *Skeleton*.
7. To shew and describe all the *Cartilages* and *Ligaments*.

In

In the MYOLOGICAL Part.

1. To give the Structure of a *Fibre*, *Membrane* and *Muscle* in general.
2. To raise every *Muscle* in particular ; shewing its Origin, Progress and Infertion ; giving an Account of its first *Discoverer*, and to whom we are obliged for its best Description.

In the INTEROLOGICAL Part.

1. To give the Division of the Body, with a Description of its common containing Parts, as the *Cuticula*, *Cutis*, &c.
2. To shew all the *Viscera* contained in the Cavity of the *Thorax* and *Abdomen*, in *situ naturali*, observing their Situations and mutual Connections one with another, and from thence explaining several *Phænomena* that happen in the Practice of *Physick* and *Surgery*.
3. To demonstrate each *Viscus* in particular.
4. To shew the Parts subservient to Generation in both Sexes, in fresh Bodies and dried Preparations.
5. To shew the Organs of *Sense* in fresh and dried Preparations.
6. To demonstrate all the Parts of a human *Fœtus* that differ from an Adult,

as

as the *Thymus*, *Glandulæ*, *Renales*, (their numerous Vessels being all filled with different coloured Wax) the *Funiculus* and *Vasa umbilicalia*, the *Foramen ovale*, *Canalis Botalli*, vel *Ductus arteriosus*, *Ductus venosus*, &c.

7. To examine the *Placenta uterina*, with the Membranes that involve the *Fœtus in utero*.

In the NEUROLOGICAL Part.

1. To discourse of the *Nerves* in general.

2. To trace all the *Nerves* that rise from the *Medulla oblongata*, through the Holes in the *Cranium* to their respective Terminations in the Nose, Eyes, Ears, Tongue, Skin of the Head and Face, Neck, and Parts contained in the Chest and lower Belly ; and those that spring from the *Medulla spinalis* into the Extremities where they chiefly end.

In the ADENOLOGICAL Part.

1. To explain the Structure of the *Glands* in general.

2. To demonstrate the *Brain* and *spinal Marrow*, with all the Membranes that involve them.

C c 3. To

3. To examine the *salivary*, the *mammary*, and the other *conglomerated Glands*, injecting the excretory Ducts of some of them with *Mercury* and *Wax*.

4. To demonstrate several of the *lymphatick* or *conglobated Kind*.

In the ANGIOLOGICAL Part.

1. To discourse of the *Arteries*, *Veins*, and *lymphatick Vessels* in general, demonstrating their several Coats and Valves.

2. To fill all the *Arteries* with a *cereaceous Matter*.

3. To inject the *Sinuses* of the *Dura mater*, and fill some of the *Veins* with a different coloured Wax, and to trace the rest of them, particularly the *Azygos*, the Ramifications of the *Porta*, and those that are opened in *Venæsection*.

N. B. The above mentioned Parts are to be exhibited in human Bodies, most of them being likeways shewn in dried Preparations, and in describing them the following Particulars are to be considered and explained, viz. their *Names* in *Greek*, *Latin* and *English*, *Etymology*, *Discoverer*, *Number*, *Situation*, *Connexion*, *Figure*, *Substance*, *Cavities*, *Magnitude*, *Membranes* or *Coats*, *Vessels*, *Colour*, &c. with their most probable *Use*. There will be added, in the

Demonstration of the *Viscera* and *Glands*, some Observations from dissecting *morbid Bodies*, how they may be preternaturally affected, with an Explication of the *Symptoms* that proceed from thence.

In the COMPARATIVE Part of this Course.

1. To demonstrate and compare all the Parts of a *Quadrupede*, at the same Time, with those of a *human Body*, that their different Structures may be the better observed.

2. To shew the *Vasa lactea*, the Glands of the *Mesentery*, *Receptaculum chyli*, *Ductus thoracicus*, and its Opening into the *subclavian Vein*.

3. To demonstrate the four *Stomachs* of some Animals that *chew the Cud*, and to give an Account of the Cause and Use of *Rumination*.

4. To shew the *peristaltick Motion* of the Guts, and the Action of the *Diaphragm* in a Rabbit.

5. To demonstrate the *Uterus* of a Cow, with its *Cotyledones*, and the Liquors and Membranes of the *Fætus* included.

6. To raise all the *Muscles* in a *Volatil*, inject its *Arteries*, and trace its *Nerves*; to examine the internal and external Structure of its *Ear*; to demonstrate the *Membrana*

brana nectitans, and shew the Contrivance that hinders the Tendon of its Muscle from compressing the *Globe* of the Eye while it acts, with the Structure of the other Parts of the Eye. To examine the two *Stomachs*, viz. the *Ingluvies* and *Ventriculus*, or Gizzard, with the *Prolobus* or *Vestibulum*, the Heart and Lungs, with the Perforations or Openings of the last mentioned, into several pellucid membranous Bladders that ly between the Folds of the *Intestines*.

7. In a *Cock*, to demonstrate the *Testes*, *Kidneys*, *Ureters*, the two *Penises* and *Cloaca*.

8. In a *Hen* to shew the *Ovarium*, with the *Racemi vitellorum*, the *Oviductus* and *Uterus*.

9. To shew the Circulation of the *Blood*, and the *Animalcula in semine musculino*, with *Glasses*.

10. To give the anatomical Description of all the Parts of an *Oyster*, *Skate*, *Lobster* and *Whiting*. The Structure of the Heart, and the elegant Contrivance of the *Gills*, will be demonstrated in this last named Fish, with an Account of the Motion of the Blood in those Animals that have but one Ventricle in their Heart.

11. To

11. To exhibit the Structure of that most *abstruse Organ of Hearing* in seven or eight different *Animals*.

After a faithful and complete Demonstration of the above mentioned Particulars, to conclude the Course I will give a short History of the OECONOMIA ANIMALIS, drawn from the Structure of the Parts thus described, and comprehended under the following Heads, *viz.* Of *Mastication, Deglutition, Digestion, Chylification, Sangnification*, the *circular Motion* of the *Blood* in a *Fœtus* and in an *Adult*; of *Nutrition, Secretions* of all the particular *Humours* in the *Body* from the *Massa sanguinea*; of *Generation, Respiration, muscular and progressive Motion*, with an Account how the *Senses* are performed, &c.

From the Blue Boar over against the End of Fetter-Lane in Fleet-Street, September 24. 1706.

F I N I S.

A SHORT
 APPENDIX
 TO THE
 ACCOUNT
 OF
Human Muscles,

Published by

J. DOUGLAS M. D.

*Containing Additions to the Descriptions of
 some of the Muscles.*

Page 1. **O**BLIQUUS DESCENDENS arises by several Tendons; that next the *Vertebræ dorsæ*, being longer than any of the rest, from the lower Edge of the 5th, 6th, 7th, 8th, 9th, 10th, and 11th Ribs, a little before they become cartilaginous, and tendineo-

dineo-carnous from all the Outside of the same Ribs near their Cartilages. Its four uppermost acute Beginnings are intermixed with the terminating *Digituli* of the *Serratus anticus major* upon the Body of the Rib, and all the rest adhere to the *Latissimus dorsi* at its Origin from the Ribs. Its Insertion is likewise tendinous into the fore Part of the *Os ilium*.

N. B. Before you can raise this Muscle, you must free Part of the *Latissimus dorsi* from its Adhesion to the last named Bone, and then you will have a View of the *Obliquus internus*, the *Triangularis lumborum*, the Tendon of the *Transversalis abdominis*, and the *Sacro-lumbalis*.

Page 2. *OBLIQUUS ASCENDENS* runs in fleshy between the three last Ribs, when their cartilaginous Endings do not adhere to one another.

N. B. If you will take the Trouble to separate the two Tendons of these oblique Muscles, you will observe that *that* of the *Internus* is almost quite lost in the Tendon of the *Externus*, before it reaches what they call the *Linea alba*: But, before you can affect this, you must cut thro' a tendinous Membrane that comes from the Tendon of the *Transversalis* at the semilunary

nary Line, and joins in with that of the *Ascendens*.

Page 3. RECTUS is much broader at its Insertion than in any other Part, where it receives some fleshy Fibres from the lowermost Origination of the pectoral Muscle.

N. B. The Tendons of the oblique Muscle cannot be easily separated from its Intersections, the lowermost of which lyes parallel with the Navel, but all the rest are above it.

The fleshy Fibres of the *Transversalis*, above the fore Part of the *Os ilium*, run disgregated, and firmly adhere to the Muscle above them.

Page 5. In Columbus's Time it was a prevailing Opinion, that the oblique and transverse Muscles of the *Abdomen* were *Digastricks*, or *Biventers*, *Vid. Reald. Columb. de re anatom. lib. v. cap. xxii. de musculis*.

Page 7. Some describe and delineate, for the *Transversalis penis*, the *Levator ani externus Rioli*.

Page 11. Columbus was of the Opinion, that the *Musculus occipitalis*, which he first described, and named *Musculus supercilium trahens*, joined the *Frontalis* by its broad Tendon, and so drew the Skin of the fore

fore Head and hind Head backwards.
Vid. cap. vii. de musculis.

Page 12. I have often took Notice of a little fleshy Slip, which parted from the *Orbicularis palpebrarum*, and run down with the *Zygomaticus*.

Page 18. DEPRESSOR LABIORUM COMMUNIS arises between that Part of the *Latissimus colli*, which climbs over the *Maxilla* to the Angle of the Lips, and the *Depressor labii inferioris proprius*.

Page 20. The Origin of the DEPRESSOR LABII SUPERIORIS PROPRIUS is continued as far back as the foremost *Dens molaris*, from whence it runs up, under Part of the *Levator labii superioris proprius*, to its Termination.

Page 22. BUCCINATOR being continued between these two Originations, to the *Pterigo-pharyngæus* on one Side, and the *Mylo-pharyngæus* on the other.

Page 22. LATISSIMUS COLLI. Its Slip, that terminates in the Angle of the Lips, runs up between the *Depressor labiorum communis* and the *Masseter*.

Page 30. R. Columbus first took notice of the true Origin of the *Coraco-hyoidæus*.

Page 33. In some Subjects I have observed that a great Part of the CERATOGLOSSUS did arise from the Basis of the Bone,

and in some others I have found few or none of its Fibres to spring from thence.

Page 34. LINGUALIS was first described by the last named Author, being thus named only by *Spigelius*.

Page 41. That some of the Fibres of the THYREO-PHARYNGÆUS run up, and are spread upon the Membrane of the *Glot-tis*, is Mr. *Cowper's* Observation.

Page 42. The PALATO-STAPHYLINUS seems to have been partly known by Mr. *Dionis* a French Surgeon; for, in his *Anatomy of human Bodies improved*, he affirms the *Uvula* to be formed by the Union of two little round Muscles that spring from the *Septum nasi*. If I had known so much when I first described these Muscles, his Name, and not my Mark, had been affixed unto them, and I had only given their true Description, which he has erred in. This same Author does likewise very accurately describe the two Arches that reach from the Sides of the *Uvula* to the Tongue, which are afterwards reckoned two new Muscles by *Valsalva*, under the Name of *Glossio-staphylini*.

Page 43. The circular Fibres of the *Thyreostaphylini* cover the last described Muscles.

Page 43. SALPINGO-STAPHYLINUS is a pretty thick and round Muscle, its true Origination being pointed at by *Veslingius* in his *Syntagm. anatom. cap. xi. pag. mihi 175.* long before *Valsalva* christned it by its Name.

Page 45. In my humble Opinion, with all Submission to the better Judgment of others, the MUSCULUS TUBÆ NOVUS may well be divided into two distinct Muscles, as upon Occasion I think I can very easily demonstrate. The first I bring broad and tendinous from the *Os palati*, and fix its Termination into the Tube of the Ear, which it serves to dilate. The other, which is much smaller, seems to derive its Origin from the *Apex* of the bony Part of the foresaid Tube; in its Ascent it closely adheres to the first, but, at the Hook-like Process of the Bone, its small Tendon departs from it, and, growing broad and thin, is soon spread upon the *Membrana faucium* above the *Foramina narium*, at the Sides of the *Uvula*. Its Use being, when it acts with its Partner, to antagonize the *Thyreo-staphylinus*.

Page 52. The CROTAPHITE, or *temporal* Muscle, is covered with a particular tendinous Membrane, that springs from the Bones which give Origin to the upper
and

and semicircular Part of this Muscle, and, passing over the same, contracts like it, and is inserted into all the *Os jugale*, and the adjoining Part of the *Os frontis*. Its Use is to fortify this Muscle in its Action, by bracing it down at that Time. When this Membrane is removed, we meet with a few thin fleshy Fibres, which terminate in the broad middle Tendon of the Muscle, just as it passes under the Yoke-Bone. The under Side of this Tendon, which appears as if it were composed of several small Ones closely conjoined, is lined, as it were, by a great many more fleshy Fibres, to prevent its being injured by the Hardness or Roughness of the subjacent Bones. It runs down the two Edges of a *Sulcus* in the fore Part of the *Processus coronæ* tendinous and fleshy.

Page 53. The third Beginning of the *Masseter* arises from all the inner Edge of the *Os jugale*, being easily separated from its other Beginnings, and is inserted tendineo-carnous into all the Outside of the *Processus coronæ*, and the Neck of the lower Jaw.

Page 56. This moveable Cartilage receives, in like Manner, some fleshy Fibres from the *temporal* and *Masseter* Muscles.

Page 58.

Page 58. SUBCLAVIUS arises also from the Root of the *Processus coracoides scapulae*, closely adhering to the Ligament that runs between it and the *Clavicula*.

Page 60. The *Diaphragm* arises on each Side of the *Vertebrae lumborum* by the following distinct Beginnings.

1. Is fleshy from the Side of the first *Vertebra* of the Loins.
2. Is tendinous from the fore Part of the second, third, and sometimes fourth *Vertebra*. This Tendon is almost inseparable from some Part of its Fellow on the other Side.
3. Is tendineo-carnous from the Side of the second *Vertebra*, and often from the third also, especially on one Side.
4. Its fourth Origin is by a thin Tendon from the Root of the transverse Process of the second *Vertebra lumborum*; between this and the last Rib the *Triangularis* runs up to its Termination.

The superior Muscle arises by two fleshy Beginnings, whose Fibres are carried streight down, &c. whereas all those from the Ribs run obliquely inwards.

Page 62. Line 3. instead of *relaxed*, read *contracted*.

Page 64.

Page 64. The *Anus* has two Sphincters; the first may be called *externus*, or *cutaneus*, which surrounds the *Podex* about the Breadth of one Inch, being placed immediately between the Skin and the Fat. The second is named *internus* and *vaginalis*, being described in the Specimen.

Page 64. LEVATOR MAGNUS arises from the *Os pubis*, between its Junction and the Hole common to it with the *Ischion*, from the Tendon that covers the *Marsupialis*, and from the acute Process of the last named Bone; between which and the lower Part of the *Os coccygis* it adheres to the *Musculus coccygeus*, being both covered with one Membrane.

Page 66. *Galen* divides the *Trapezius* into two Muscles, the *superior* and the *inferior*. The first he calls *Trapezia*, and to the second later Anatomists have given the Name of *Cuculla*, from whence they are both commonly denominated *Cucullares*. The inferior Part of this Muscle grows a little tendinous before it is inserted into the back Part of the *Spina scapulæ*; its upper Part, from the *Os occipitis* to the spinal Process of the last *Vertebra colli*, is inseparably united to its Fellow of the other Side.

Page 76.

Page 76. The *Complexus* seems to derive some Part of its Origin from the oblique Processes of the *Vertebrae* of the Neck.

Page 79. The Insertion of the *Spinalis colli* is by four small Tendons.

Page 81. I discovered the *Intertransversales vertebrarum colli* some Time before I knew that Mr. Cowper, to whose penetrating Eyes there is nothing hid of this Kind, had made Mention of them any where; however, if I had not quite forgot it, not having the Transaction (N^o. XXI. An. 1699. Page 132.) by me, when I put my loose Papers in Order for the Press, I had certainly affixed his Name, and not my Mark.

Page 88. The *Fasciculus* of Fibres, that runs off from the *Pectoralis* to the *Obliquus abdominis externus*, is described very accurately by R. Columbus.

Page 92. The second Origination of the *Latissimus dorsi* is tendinous and fleshy from the Extremity of the bony Part of the four or five lowermost Ribs near their Cartilages. In some muscular Dissections, since this Specimen was made publick, I observed a small Bundle of fleshy Fibres to arise from the Outside of the *Basis scapulae*
near

near its inferior Angle, and, adhering to the upper Part of this Muscle in its Progress along the *Costa inferior* of the Shoulder-Blade, to be lost into the same, just where it begins to grow tendinous. That this is so in all Bodies I am apt to believe, tho' before this I had never remarked it.

Page 102. PALMARIS LONGUS gives some tendinous Filaments to the *Ligamentum annulare*, to the *Abductor pollicis*, and not to the *Adductor*, as it is falsely printed, and to the *Flexor* of its first Internode.

Page 105. FLEXOR CARPI ULNARIS has likewise a narrow fleshy Beginning from the Side of the *Ancon*, between which and its tendinous Origin a large Branch of the brachial Nerve, called *Ramus ulnaris*, passes to the Cubit.

Page 111. EXTENSOR DIGITORUM COMMUNIS gives a Tendon to the little Finger, besides the Tendon of its *Extensor proprius*.

Page 118. What they call EXTENSOR MINIMI DIGITI is commonly inserted by two Tendons.

Page 128. ILIACUS INTERNUS arises from all the inner Lip of the semicircular Part of the *Ilium*, from the Edge of that Bone between its anterior Spine and the
Ace-

Acetabulum, and from most of its *Costa* or hollow Part.

Page 130. Line 1. read, Muscle, being inseparably joined to that of the *Membranofus*.

GLUTÆUS MEDIUS is inserted by a broad Tendon which runs after an oblique Manner.

Page 130. I mean, some Part of the tendinous Fibres of the *Glutæus minimus* are spread upon the Membrane that involves that Part of the Bone.

Page 136. COCCYGÆUS is also inserted into the inferior Part of the *Os sacrum* in some Subjects.

Page 141. VASTUS EXTERNUS, its Origin is continued from near the Insertion of the *Glutæus minimus* obliquely outwards over the great *Trochanter* to the *Linea aspera*; or rather, this Muscle has a second Origination from all that rough Line, by fleshy Fibres, which run obliquely forwards to a middle Tendon, where they terminate.

VASTUS INTERNUS arises tendinous and fleshy from between the fore Part of the *Os femoris* and the little *Trochanter*, and from almost all the Inside of the *Linea aspera*, with Fibres running obliquely forwards and downwards. From its insert-

ing Tendon there runs off an *Aponeurosis* to the Muscles below the Head of the *Tibia*.

CRURÆUS firmly adheres to most of the fore Part of the *Os femoris*

Page 149. Line 11. EXPANSIO TENDINOSA, read, is spread upon the adjacent *Abductor pollicis*.

Page 152. Line 6. PERONÆUS PRIMUS, read, at the outer Ankle.

Page 153. Line 11. PERONÆUS SECUNDUS, read, with that of the *preceeding Muscle*.

Page 154. EXTENSOR LONGUS. These small Tendons I am now inclined to believe proceed from the *Interossei*.

Page 159. I keep by me the Muscles of a *Fœtus* prepared, in which I observed a small fleshy Muscle to arise from the *Os perone*, near the Extremity between the *Flexor pollicis longus* and the *Peronæus brevis*; this, in the Sinuosity of the *Calcaneum*, grows tendinous, and, adhering strictly to the *Massa carnea*, in its Progress forwards joins in with the Tendon of the *Perforans* that belongs to the Toe next the great one.

Page 160. Upon a stricter Inquiry I have observed that the *Interossei digitorum pedis*

pedis do really all terminate as they do in the Fingers.

Page 161. All the Muscles that I said arise from the Tendon of the *Musculus peronæus*, arise rather from the Membrane that covers this Tendon, and incloses it in the *Sulcus* of the *Os cuboides*.

Page 165. ABDUCTOR POLLICIS has very often a tendinous Origin from the Edge of the *Os cymbiforme*, receiving near this Bone some tendinous Filaments from the *Tibialis anticus*.

F I N I S.

